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USSR Report

AGRICULTURE

No. 1282

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MAJOR CROP PROGRESS AND WEATHER REPORTING

OVERVIEW OF FIRST QUARTER 1981 SPRING SOWING PROGRESS

Moscow SEL'SKAYA ZHIZN' in Russian 23 Apr 81 p 3

[Article by N. Osychkin: "Spring Watch"]

> [Text] The scope of the pre-May socialist competition is expanding with each passing day. The agricultural workers are fully resolved to carry out the spring sowing work successfully and to establish a reliable foundation for the harvest of the first year of the new five-year plan and also to supply the country with greater quantities of agricultural products and raw materials.

According to data supplied by the USSR CSA, by 20 April spring crops had been sown on 20.5 million hectares at kolkhozes, sovkhozes and interfarm enterprises. This was more than at the beginning of the third decade in April last year. During the past 5 days, seed was planted in the ground on 6.4 million hectares. A top dressing has been applied to more than 30 million hectares of winter crops. Notwithstanding the complicated spring weather, the tempo of the operations is increasing. The machine operators of detachments and teams are doing everything possible to ensure that their fields are sown during the best periods and that healthy seedlings are obtained on each hectare.

Field work has commenced in the Volga region. More than 25,000 units, joined together in sowing complexes, are carrying out sowing operations in Volgogradskaya Oblast. Special attention is being given to retaining moisture and to applying mineral fertilizers to the soil along with the seed. The Saratov farms plan to sow their spring crops using 1st and 2d class seed. More productive varieties of wheat, barley and pulse crops are being introduced into production operations. Grain crops are being sown on the second 100,000 hectares in Kurskaya Oblast. The feed fields in Orlovskaya Oblast are being expanded considerably; the farms are sowing barley, oats and grasses.

The Ukrainian machine operators value highly each hour of springtime. Mainly early crops have been sown here, with the work being carried out by leading farms in just 40-45 hours. Today the machine operators are concentrating their attention on preparing the soil for corn, sunflowers, buckwheat and millet. Sowing work is being carried out in Moldavia, Belorussia, Latvia, Lithuania and Estonia. The sowing of cotton continues in the republics of Central Asia and Azerbaijan. It has already been planted on 2.4 million hectares. Many farms in Uzbekistan have commenced tending their plantations.

A distinctive feature of this present sowing period is the mass introduction of industrial technologies for the cultivation of agricultural crops. For the very first time, grain corn will be grown on 2.9 million hectares using a progressive method, sunflowers -- on 518,000 hectares, soybeans -- on 576,000 and sugar beets -- on 260,000 hectares. Considerable areas will be set aside for potatoes, flax, vegetables and other crops. A considerable amount of work has been carried out in all areas in connection with the preparation of equipment, training of machine operators and staffing of the teams and detachments. Mutual inspections of the readiness of the kolkhozes and sovkhozes for the mass sowing operations were organized with the participation of scientists and specialists.

What has been done and what still needs to be accomplished for carrying out the task of introducing industrial technologies into operations? This question was discussed by the Board of the USSR Ministry of Agriculture. On the whole, the farms were fully supplied with corn seed. The hybrid structure has been improved somewhat. Such hybrids as Bukovinskiy-3, Dneprovskiy-247, Dokuchayevskiy-4, KVS, Krasnodarskiy-303, Krasnodarskiy 434, Pioner-3978, Moldavskiy-251, Moldavskiy-385, VIR-338 and others will be sown in various zones throughout the country.

The farms must be supplied with herbicides on a more rapid basis and they must employ them correctly. The available supplies of Eradikan and also Agelon, Ramrod, Simasine and Otrasine make it possible to carry out anti-weed treatment on all of the corn fields on which an industrial technology is being employed. A complete norm of mineral and organic fertilizers must be used in order to obtain a high grain yield. However, on a number of kolkhozes and sovkhozes in the Ukraine and Rostovskaya Oblast, only one half of the mineral fertilizer norm has been allocated for fields on which corn will be grown using an industrial technology. The level of concentration of the plantings is inadequate. Indeed, additional difficulties arise in connection with the growing of this crop when the plantings are dispersed.

Many enterprises of the industrial ministries are failing to adhere to the schedules for the deliveries of specialized equipment. Thousands of VP-8 soil levelling units, BDT-7 disk harrows, BP-8-01 spring-tooth harrows and OVT-1V sprayers have not been delivered to the farms. Minsel'khozmash [Ministry of Tractor and Agricultural Machine Building] supplies BP-8 harrows without levelling boards and this makes it unsuitable for high quality soil preparation. In Stavropol'skiy Kray and the Kabardino-Balkarskaya ASSR there is a shortage of sowing machines, cultivators and irrigation equipment. The initiative being displayed by enterprises and organizations engaged in producing the deficit machines in the various areas is deserving of support. In Dnepropetrovskaya Oblast, for example, the production of soil cultivation equipment of the Kombi-8.8 type has been organized, in Khersonskaya Oblast -- toothless drag harros-levellers and in Kiyevskaya Oblast -- units for the simultaneous application and placement of herbicides in the soil. Similar work can be organized in other areas. Despite the difficulties being encountered, the industrial technology is nevertheless confidently forging its way out onto the fields. Corn has already been sown on 207,000 hectares using a new method. This same work is now being carried out in Moldavia, the Crimea and in the north Caucasus.

According to reports received from the various areas, more than 8,000 detachments and teams have been formed for cultivating sunflowers, soybeans and castor oil plants using the industrial method. The farms were supplied with seed for these crops. However, the quality of the seed was not high in all areas. The kolkhozes and sovkhozes in Saratovskaya, Kuybyshevskaya and Belgorodskaya Oblasts are replacing the non-graded seed with good seed obtained from the state resources. The deliveries of herbicides required for the cultivation of soybeans have not been completed. In Ivanovskiy Rayon in Odesskaya Oblast, the sowing period for sunflowers is at hand and the required amount of the herbicide Treflan has still not been delivered here. The deliveries of fertilizers and herbicides for the soybean fields in Amurskaya Oblast are being delayed.

More than 2 million hectares have already been sown in sugar beets. In a number of rayons in the RSFSR, the Ukraine, Kazakhstan and Kirgizia, this crop is being cultivated using the industrial technology. The seed tubers of potatoes have been planted in the ground on the first 294,000 hectares. Vegeatble crops have been planted on almost 380,000 hectares. Spinning flax has been sown on 172,000 hectares. Rice sowing operations have commenced on irrigated lands in the south. Spring work is continuing in the orchards and vineyards. All of the farmers' efforts are being directed towards obtaining a high yield during this first year of the five-year plan.

7026
CSO: 1824/244

LIVESTOCK FEED PROCUREMENT

REGIONAL FEED CROP DEFICIENCIES DISCUSSED

Moscow SEL'SKAYA ZHIZN' in Russian 24 Apr 81 p 1

[Editorial: "Concern For Feed Commences in the Spring"]

[Excerpts] The decisive period in which to lay the foundation for obtaining rich forage materials is at hand. A great volume of work must be carried out. The forage crops occupy 62 million hectares in the crop rotation plans. This is somewhat less than last year. Thus, a maximum amount of feed must be obtained from each hectare. Special importance is attached to exercising strict control over the forage crop plantings on irrigated land. The work must be organized in a manner such that the production of these crops exceeds the rates of development for animal husbandry. In planning the production and procurement of forage, emphasis must be placed not on that which has already been achieved but rather on the increasing productivity of animal husbandry. At the same time, as emphasized during the July (1978) Plenum of the CC CPSU, improvements must be carried out in logistical support for the branch.

But genuine concern is not being displayed in all areas for the creation of reliable feed supplies. Difficulties were experienced during this past wintering period by the animal husbandrymen in Kalininskaya, Bryanskaya, Smolenskaya and some other oblasts, where just slightly more than 10 quintals of feed units per head were laid away. In recent years, many kolkhozes and sovkhozes in the Far Eastern and Urals regions and in the Lithuanian, Georgian, Armenian and some other republics have decreased their forage procurements. Reductions have taken place in the harvesting of corn for silage from irrigated land in Tadzhikistan.

The animal husbandrymen are aware of the importance of increasing feed production while simultaneously raising its full-value and the return realized from it. Last year, for example, the kolkhozes and sovkhozes in Donetskaya Oblast over-fulfilled their procurement plans for coarse and succulent feeds. It would appear that the animal husbandrymen are now making full use of the potential productivity of their large-horned cattle. Thus, the specialists believe that the annual milk yield can be raised by 1,000 kilograms per cow. But use is not being made of this possibility. The feed expenditures for the production of a unit of output are too great. This is mainly due to the fact that the rations are not balanced. In order to prevent this from happening in the future, corrections must be introduced into the structure of the areas under crops and the plantings of high protein pulse crops expanded. Meanwhile, the proportion of cereal grains in the annual grass structure is excessive and the valuable pulse crops are almost not being cultivated whatsoever. Some leaders only utter words concerning the importance and need for solving the protein problem. The party committees and soviet and economic organs must increase the responsibility of the personnel for ensuring that animal husbandry is supplied with feed. This indicator must become one of the most important for evaluating their work, summarizing the results of the competition and defining measures for issuing moral and material incentives.

Spring is hurrying by. During these warm days, the work out on the feed fields must be organized in a manner such that each hectare of land produces a maximum yield and feed production becomes further developed. Strict observance of the agricultural practices employed in the cultivation of forage crops committed to the care of specialized brigades and teams, the skilful use of organic and mineral fertilizers and the timely preparation of the feed harvesting equipment -- everything must be subordinated to solving this task.

A strong reserve for supplementing the supplies of coarse and succulent feed is that of secondary sowings. It is expected that their area will be increased twofold compared to last year and reach 4.7 million hectares. A requirement exists at the present time for clearly defining all of the tracts on which the second crop is to be grown and to procuring and preparing the seed. Taking into account the peculiarities of this spring period and the limited supply of nutrients in the soil, a top dressing of mineral fertilizers should ideally be applied to the perennial grass plantings. Special concern should be displayed for those fields on which seed plantings for forage crops are being grown -- for this constitutes the foundation for strengthening the feed base.

An increase in the production of meat and other animal husbandry products, as noted during the 26th CPSU Congress, is the first task with regard to realizing further improvements in agriculture. Today animal husbandry is a most important front of work in the rural areas. And feed production is the leading edge of this front.

7026
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MEAT LOSSES AT RSFSR MEAT COMBINE DISCUSSED

Moscow SOVETSKAYA ROSSIYA in Russian 25 Apr 81 p 1

[Article by N. Demidov, Belgorodskaya Oblast: "The Corridor of Losses"]

> [Text] The livestock units and complexes of Belgorodskaya Oblast sold 37,500 tons of meat to the state in the first quarter of the new five-year plan. The plan was fulfilled. But at the same time, large losses of already-produced output are occurring. Where, how, and why is the meat being lost?

The above information was the starting point of our discussion at the Skotoprom [Livestock Industry] Association of the RSFSR Ministry of Agriculture.

"Do you know how much weight the steers lose between the time they leave the livestock unit and when the meat is put in the refrigerator at the combine?" V. I. Blokhin, deputy chief of the association, asked and then gave the answer himself. "A lot. But no one knows exactly how much. This is not shown in any documents."

But why not, I thought, find out; why not look into the matter and see exactly where and why the steers lose weight? So I decided to make a kind of experiment. At the large livestock complex of the Valuyskiy Sovkhoz I and specialists from the republic Skotoprom Association picked out two batches of steers destined for sale. There were 30 head in each group. The first group was sent immediately to the meat combine, where it was supposed to be held for 24 hours before slaughter without feed, but definitely with water, as required by production procedure.

Curious things already started happening during unloading. One of the workers ran up carrying some kind of long object. He began beating on the backs of the animals.

"The stock could all be injured that way," A. G. Ishkov, director of the Valuyki Meat Combine observed, as if he was noticing for the first time that his enterprise used clubs and pointed sticks instead of electric chutes.

"Yes, it is wrong," the delivery agent from the farm agreed.

No one lifted a finger, however, to stop these obvious violations. And why should they be upset? The farm sells and the combine accepts the herd by number of head. And all the steers did survive! Finally, the group of livestock we were following took their place in a pen. We weighed them. At the sovkhoz the liveweight of each steer had been 381 kilograms; at the meat combine it was now 358 kilograms. One of the reasons for the loss was the stressed state of the animals. But that was not everything. We walked around to all the pens where livestock were being held before slaughter. We saw the same thing everywhere: impassable mud and empty water troughs.

"This is not unusual," A. I. Ryazanov, chief animal technician at the Kolkhoz imeni Krupskaya in Volokonovskiy Rayon told us. "Stock from our farm often see no water for two days. But our authority ends at the gates of the meat combine."

On the other hand, enterprises of the meat industry are supposed to take care of the livestock they receive. Otherwise, after all, there could be quite a loss of meat. Representatives of the farms are also supposed to be present at the combine at all times; the kolkhoz or sovkhoz is concerned about what kind of monetary calculations for the output are made. But on the other hand, payment is made on the basis of the final meat output, that is, after complete processing and before it is put in the refrigeration rooms. And this "corridor" from the gates of the combine to the refrigeration unit is, as it were, unmanaged. Usually no one calculates the losses here.

It is in this "corridor" that the carcasses of the animals are processed. And again no one figures who does the cutting, and how much. The quantity does not affect wages or the indicators of the brigade. This is in reality a natural channel for petty theft.

Employees of the department for combatting embezzlement of socialist property and speculation of Valuyskiy Rayon recently conducted a surprise inspection at the meat combine. Twenty-five persons were arrested carrying 140 kilograms of meat through the passages. Our question is: If they hadn't been arrested, would it have been possible to detect the shortage of this amount of meat? The answer, it turns out, is that they would not have been discovered. How can that be true? It is true because a shortfall of output is written off against so-called above-norm meat cutting.

It is unthinkable to watch every employee on the combine conveyor. A great deal here depends on the good conscience of the workers themselves. But the point is that the representatives of the farm that turned over the livestock do not even look at this "unamanaged corridor," so they cannot determine whether the production processes are done correctly. And the meat combine credits them with the weight of the output received after all operations, by final production without consideration of losses and theft. Does this mean, then, that no one has lost? No, we have all lost! We are losing real meat, already produced, not some mythical output.

"We often receive complaints that we hold the livestock too long," A. G. Ishkov, director of the meat combine, said. "The farms themselves are to blame. We make up a precise schedule for receiving livestock with their agreement, and they violate it. Right now we are waiting to receive animals form the Put' Lenina Kolkhoz in Valuyskiy Rayon, the Lugovoye Sovkhoz in Veydelevskiy Rayon, and several others. But no trucks have arrived from them yet. On the other hand, at the end of the month or the quarter livestock come in from all directions."

Indeed, there are problems, but can it be impossible to do anything to eliminate the losses? It is not impossible. To prove this, let us return to our experiment, to the second group of steers which was to arrive at the combine conveyor directly from the beds of trucks of the Valuyskiy Sovkhoz.

We looked at the scales again. At the farm each animal weighed 377 kilograms; at the combine the weight was almost the same. So this was the final result. The difference in meat production in the two control herds was 12 kilograms per head. This is the amount of finished output that was lost for each steer when they were held in the combine yard. It was lost because of mismanagement, and this happens with all the animals kept in the stalls of the enterprises. There is only one solution: switch to the progressive method of taking stock "right from the farms." This would make it possible not only to avoid losing meat, but also to stabilize the work of the enterprises.

"We have no trucks," A. G. Ishkov said.

"We will rent them to you," P. V. Tyazhlov, deputy chief of the oblast Skotoprom Association, retorted.

"We do not have anyone to load and unload the trucks."

"We will help you. Are you ready to work in a new way?"

"No, it is a lot of trouble."

Last year the Belgorodskaya Oblast Skotoprom Association bought 135,500 tons of meat, almost 12,000 tons less than planned. At the same time, using progressive livestock receiving procedures the complex at the Valuyskiy Sovkhoz alone could produce an additional 122 tons of meat.

"Unfortunately, only a few enterprises in Altayskiy, Stavropol'skiy, and Krasnodarskiy krays received livestock right from the farms, and thereby conserved a good deal of output," V. A. Klyuyev, chief of the Skotoprom administration of procurements, observed. "In general, employees of the republic Ministry of Meat and Dairy Industry disregard our suggestions on closer cooperation and are taking no concrete steps."

RSFSR Skotoprom has an interest in a rapid transition to progressive, economical, and efficient receiving right at the farms. We inquired as to the position of the republic Ministry of Meat and Dairy Industry.

"We are not against organizing the work that way either," A. N. Verteletskiy, deputy chief of the division of procurements of this ministry, answered. "But a number of difficulties arise. Above all, we have no means of transportation or repair facilities for them."

So, someone is supposed to create the proper conditions. Certainly it is the Ministry of Meat and Dairy Industry that ought to take care of this.

A word should also be said about the role of the state inspectorates of state purchases and quality of agricultural products in the krays, oblasts, and autonomous republics. Who if not the inspectors should determine where meat losses occur and do everything possible to prevent them? This service has all necessary authority to present concrete proposals to party, Soviet, and economic bodies, in fulfillment of its organizational function. But it is acting very timidly.

It will soon be 10 years since the question of receiving livestock at the farms was debated on various levels. No one opposes it. Everyone understands the great savings of meat that is involved. But at the same time, almost nothing has been done in practice to eliminate the notorious "corridor of losses."

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REGIONAL DEVELOPMENT

POTENTIAL FOR AGRICULTURAL DEVELOPMENT ALONG BAM RAIL LINE

Moscow SEL'SKAYA ZHIZN' in Russian 15, 16, 17 Apr 81

[Article by Yu. Baklanov and M. Babintsev: "Along the Baykal-Amur Trunk Line"]

[15 Apr 81 p 2]

> [Text] It was only 6 years ago that the initial detachments of builders came to these areas. And at the present time, the Baykal-Amur Railroad Trunk Line, for hundreds of kilometers, is already serving peaceful labor and the accelerated development of the rich natural resources of Siberia and the Far East.
>
> Within a brief interval of time, 2,000 kilometers of track were laid, more than 1,000 bridges were erected over large and small rivers, tunnels were forged through rocky cliffs and mountain ridges and new cities and settlements were built. In the capital of BAM [Baykal-Amur Trunk Line], Tynda, there are already 50,000 residents and it continues to grow and surpass the original estimates of the planners. Other support bases for the trunk line are appearing along the route -- Ust'-Kut, Severobaykal'sk, Urgal. And among the problems associated with carrying out the instructions of the congress on the need for levelling off the social differences, from a territorial standpoint so to speak, one of the most important is that of ensuring that the local population is better supplied with locally produced food products. As yet, the Agricultural Department of BAM is satisfying the requirements of the builders of the route by only 5-7 percent. In order to change this situation, importance is attached not only to intensifying production at kolkhozes and sovkhozes which have existed for some time, but also to strengthening the logistical base of new farms in a more rapid manner. How is this work proceeding?

For the Sovkhozes To Grow and Become Stronger

In the young family of worker Nikolay and laboratory worker Aleksandra Bubnovyy, their first child Vladimir was born at the same time that the Angarskiy Sovkhoz came into existence. On the map of Severo-Baykal'skiy Rayon in the Buryatskaya ASSR, the farm appeared at the beginning of last year; it was created based upon a former department. If we compare it with other sovkhozes in the Trans-Baykal region, then it is distinguished by its small size. The Angarskiy Sovkhoz has at its disposal approximately 800 hectares of arable land and 300 head of large-horned cattle. The milking herd consists of only 100 cows. But this is only the beginning. The farm has great prospects for the future.

In Verkhnyaya Zaimka -- at the central farmstead -- there is a secondary school, childrens nurseries and 20 apartments. New worker families have appeared. The taiga does not relinquish its land easily and yet, through the stubbing and clearing out of cinder canyons, the plans for the five-year plan call for the arable land to be expanded by threefold, mainly for field feed production. The new lands are making it possible to double the production of animal husbandry products, potatoes and vegetables.

"Reserves for growth are to be found at all three of our farms" stated the chief of the Agricultural Administration of the Severo-Baykal'skiy Rayon Executive Committee N.I. Okholin, "Although, it is true that it lacks highly skilled personnel and experienced specialists. When a discussion took place during the congress on the need for constructing housing and an entire socio-cultural complex at a higher tempo in Siberia and the Far East, we could only think that they had us in mind! A very correct goal had been established!"

However, the principal concern is how to achieve this goal. And on what level to carry out the work.

We are presently visiting the sovkhozes and alongside the temporary settlements of the BAM workers, one sees squat (as though they were assembled in a hurry) schools, kindergartens and homes for the rural workers. Meanwhile, these buildings are by no means cheap. The following information was furnished by the Severo-Baykal'skiy Rayon Executive Committee: one twin-apartment wooden building costs 20,000-30,000 rubles. Why are the sovkhozes carrying out such construction?

"Our rural construction organizations possess a low capability and they do not have a developed construction industry" we were told by the 2d Secretary of the Chitinskaya Oblast Party Committee N.F. Nosov, "Life persistently requires that they be developed in an accelerated manner. In addition, we are convinced that the organizations of USSR Minvostokstroy must participate more actively in construction operations in the rural areas."

The director of the Severnyy Sovkhoz, S.F. Rassokhin, showed us a prepared plan for a large-scale animal husbandry complex, one which calls for the use of a powerful boiler.

"This will enable us to grow vegetables in hothouses throughout the entire year. The problem, as with everyone else, is that there are no builders available. We have a reliable contractor!"

In addition to the contractor, the clients must apply themselves to the needs of the zone in a more attentive manner. Nor is everything going smoothly with the financial arrangements. It is for this reason alone that the second phase of a dairy complex at the Sosnovoborskiy Sovkhoz has still not been turned over for operation. The proportion of capital investments being used for the social development of the farms is small. The Zarechenskiy Sovkhoz, created 5 years ago, still does not have a club or kindergarten.

Land reclamation construction operations are lagging behind.

The largest complex in terms of population will be the Komsomol'sk Territorial-Production Complex in Khabarovskiy Kray. The following facilities are already in operation here: two specialized dairy sovkhozes, a swine raising combine and sovkhoz, a poultry factory and subsidiary farms of enterprises. In accordance with the long range plan for creating an agricultural zone, the capabilities of the Dzomginskiy Swine Raising Combine are being increased twofold. Specialists attached to the Dal'giprovodkhoz Institute believe that no less than 10 new sovkhozes can still be created on the lands here. But this is for the distant future. The true situation dictates a need for strengthening those farms which are already in existence. And they also are clearly receiving insufficient attention.

For three five-year plans in a row the Komsomol'skvodstroy Land Reclamation Trust has not fulfilled its plan in terms of its principal indicators. During the last five-year period, it drained only 7,000 hectares against a plan calling for 12,200 hectares and it installed irrigation systems on only 775 hectares.

An acute problem of the cities and settlements in the BAM zone is that of supplying the population with milk. The milk shortage in Tynda is especially noticeable. One of the three industrial sovkhozes in the region, the Zarya Sovkhoz, has just been assigned a new specialization. It will produce milk. The plans call for a mechanized farm for 400 cows to be built here. As yet, only one dairy barn has been placed in operation.

Certainly, the construction work must be intensified. But at the same time importance is attached to ensuring that feed is made available for the increasing number of animals. Such feed can be obtained only at a distance of somewhat more than 100 kilometers from Tynda, in the valley of the Urkan River. For cultivating the land, just as on other farms, a land reclamation detachment with powerful equipment is required here. However, such a detachment has yet to be created.

Compared to the Angarskiy Sovkhoz where the future growing areas must be obtained from the forest, its neighbor -- the Severnyy Sovkhoz -- will obtain such areas from swamps. They must be drained and thereafter the land must be provided with regular irrigation. According to the estimates of specialists, the fields here can be increased by more than 2,000 hectares. But in both instances, this work is within the capability only of a specialized organization. The Council of Ministers of the Buryatskaya ASSR handed down a decision at the very beginning of the 10th Five-Year Plan concerning the creation of such a PMK [mobile mechanized column] at the Burvodstroy Trust. The Eleventh Five-Year Plan is now at hand and still everything remains just as in the past.

Almost one half of the trunk line passes through Amurskaya Oblast. On the bottom land of the Zeya River, the people have engaged in grain husbandry work since olden times. The elderly residents recall that even watermelons were grown here. It was by no means an accident that Zeyskiy Rayon was referred to as the "golden" valley of BAM. Four sovkhozes are producing milk, vegetables and potatoes. Last year, 112 quintals of tubers were obtained from each hectare. In addition to the local population, the potatoes are also being supplied partially to workers' settlements in Yakutskaya ASSR and Khabarovskiy Kray. According to the estimates of specialists, the growing areas on the bottom land can still be increased by 27,000 hectares.

"We constantly lack coarse feed; it must be supplied by other farms in the oblast" stated the chairman of the Zeyskiy Rayon Executive Committee F.N. Mayakov, "It is believed that the land reclamation specialists of Belogorskvodstroy are capable of taming and plowing up the overgrown lands and eliminating the small hillocks of grass on the natural haying lands. The local PMK must be supplied with additional equipment."

Thus, wherever we went, the conversation invariably returned to the main concern: decisive improvements were required in the work being carried out with the land and the construction and land reclamation organizations required further strengthening. In the opinion of many, this involved finding a solution for the problem of levelling off the wages of workers attached to various branches of the economy in the region.

In Verkhnyaya Zaimka, not far from the sovkhoz, there is a mechanized column of the Nizhneangarsktransstroy Trust. The director of the farm E.B. Urakov, in the literal sense of the word, had to conclude an agreement with the leaders of the trust stating that he would not borrow the trust's machine operators for work. And the temptation was great. The zonal coefficient for the sovkhoz is 0.3 and that for the mechanized column -- 0.7, the difference being the increment for work in the north. But here is the paradox. All of the workers attached to rayon institutes, including the agricultural administrations, enjoy the same privileges as the BAM workers. And those who are engaged in the direct production of milk, meat, potatoes and vegetables are deprived of these privileges. At a recent regional conference held at the Siberian Branch of VASKhNIL [All-Union Academy of Agricultural Sciences imeni V.I. Lenin], representatives of all of the rayons in the BAM zone discussed the need for regulating in a more rapid manner the wages of agricultural workers here. The time is obviously at hand for the USSR State Committee for Labor and Social Problems and the RSFSR Ministry of Agriculture to apply themselves in real earnest to these problems.

The BAM farms are still encountering difficulties owing to the fact that by no means are all of the local soviet and economic organs displaying genuine concern for the agrarian sector of the economy. There are still only a few new sovkhozes in the BAM zone and only one or two farms for every 10 bridge-construction and tunnel detachments or construction-installation trains. These collectives have at their disposal thousands of workers and specialists, powerful equipment and good transport facilities. However, in the majority of instances very few of them are providing specific support for the sovkhozes. The problem of providing support is not being evaluated properly by GlavBAMstroy or its subordinate trusts and administrations. They reason as follows: "Our concern is to build the railroad". Well certainly this is the principal concern. But why is it not possible to furnish assistance to the rural areas when the possibility exists for doing so? Certainly, there are fine examples of such collaboration, particularly in Oktyabr'skiy Rayon in Amurskaya Oblast. Special importance is attached to ensuring that the experience of this latter example is disseminated as extensively as possible.

The scientists attached to the Siberian Branch of VASKhNIL are to be reproached: as yet, no a single program for the economic and social development of sovkhozes in the BAM zone has been developed. And such a program is badly needed. We will furnish our reasons in the next letter.

[16 Apr 81 p 2]

> [Text] For solving the food problem in the BAM [Baykal-Amur Trunk Line] Zone, a need exists not only for reclaiming new land but also for making more efficient use of older lands located along the trunk line. Tremendous reserves are available in this regard in the Verkhneangarskaya, Muyskaya and Varguzinskaya basins, the Ino-Birskiy tract and many other slightly reclaimed tracts in Siberia and the Far East. The possibility exists of creating feed fields and producing greater quantities of milk, meat, potatoes and vegetables on tens of thousands of hectares here. What obstacles are standing in the way?

On a Strict Scientific Basis

If we examine the map of BAM, then the Muya River Basin appears on it as light hachures, with 30,000 of the 35,000 hectares occupied by swamps and undergrowth. According to estimates by the Buryat Combined Department of the Siberian Branch of VASKhNIL [All-Union Academy of Agricultural Sciences imeni V.I. Lenin], it is possible to procure up to 8,000 tons of hay from the available useable area and to maintain 1,500-2,000 head of large-horned cattle. And if a portion of the swamps is drained and undergrowth cleared from the tracts, the feed supplies could be increased by a factor of 3-4. It is possible that the land reclamation and soil improvement operations will become even further developed following construction of the Mokskaya GES and regulation of the Vitim River.

The results of studies also underscore the great opportunities available for the development of vegetable production and field feed production in this kray. It was back in the 1930's that a support base existed here for an experimental agricultural station, with 230 quintals of cabbage, 140 quintals of tomatoes and 100 quintals of potatoes being obtained per hectare. Even wheat ripened here. Even today the local populations in the Taiga settlements of Ust'-Muya, Bargalino, Param and Toksimo are obtaining fine vegetable yields from their private gardens.

Notwithstanding the northern location of the Muya River Basin, the duration of the non-frost period here is 120 days. Various scientific and planning organizations in the Buryatskaya ASSR have carried out a detailed study of the land available in the basin and practical methods for the effective use of mineral fertilizers have been developed. Actually, the basis for an economic justification for organizing a new farm has been created. If the proper degree of interest is displayed, it can be established within a brief period of time and ensure a rapid return on invested resources.

This is particularly important in view of the fact that the BAM zone spans areas which are not considered to be favorable for the development of agriculture. The development of new lands, as is apparent in the case of the Muya River Basin, requires considerable resources and time. A more reliable solution for the problem is that of accelerating the development of agriculture in those regions which have already achieved a definite level of production.

In the Chitinskaya Oblast Party Committee, for example, it is believed that the future Udokanskiy industrial terminal may ensure the availability of products to a considerable degree through the use of suburban farms. A production technology is being worked out at the Makoveyevskiy Swine Complex, where the plans call for the number of animals to be doubled in the near future to 108,000 head. A hothouse combine is being expanded to 15 hectares of glass-covered ground, with the plans calling for this area to be increased to 30 hectares in the future. Deliveries of dietetic meat and eggs will be ensured almost completely with the introduction into operations of the Zabaykal'sk egg and Ingodinskiy broiler poultry factories.

The Barguzin Valley possesses considerable potential for agricultural development. Nine sovkhozes and four kolkhozes in Barguzinskiy and Kurumkanskiy Rayons annually produce 4,000 tons of meat, approximately 11,000 tons of milk, 267,000 eggs and more than 500 tons of wool. Accurate economic estimates prepared by scientists at the Siberian Branch of VASKhNIL indicate that the production of products in this zone can be increased in the future by a factor of 4-5.

The basin's reclaimed land amounts to 166,000 hectares, or one fourth of all land which can be irrigated in the Buryatskaya ASSR. During the next 10 years, assuming the usual capital expenditures for eastern Siberia, the area of irrigable arable land can be increased by 50,000-55,000 hectares. In addition, the possibility exists of draining and placing in operation 30,000-35,000 hectares of water-logged tracts. In Barguzinskiy and Kurumkanskiy Rayons, a number of construction subunits have been created and there are milk plants, a meat combine and a fruit and vegetable plant. In addition, there is a developed network of roads and a centralized power supply system for the farms. At the present time, plans are being formulated for a large poultry factory, a large-scale swine complex and an irrigation system for 15,000-20,000 hectares. However, the creation of the logistical base and financial arrangements are being delayed, since opinions are divided: should the Barguzinskiy Valley be considered as a rear services area or a principal food zone for BAM sectors which pass through the Buryatskaya ASSR and Chitinskaya Oblast?

Actually, when the scientists of the USSR Academy of Sciences prepared the general plan for the construction of the Baykal-Amur Trunk Line, its food zone was shown to be a rather narrow strip and one which did not include the new and poorly developed regions adjoining the future route. Today, with the trunk line passing through the vast expanses of Siberia and the Far East and with new cities, settlements and large industrial and construction industry enterprises springing up along both sides of the route, life forces us once again to review agricultural development in this region.

"Using our resources alone, we are incapable of developing the land in the Barguzinskiy Basin in a rapid and complete manner or of creating new sovkhozes there" stated the secretary of the Buryatskaya Oblast CPSU Committee V.F. Lysov, "Barguzinskiy and Kurumkanskiy Rayons must be viewed not as a rear services base but rather as a component part of the territorial-production complex in the western sector of BAM. And since we are speaking here of large-scale capital investments for the irrigation and drainage of land and for creating the logistical base, the union departments must be included in the work. Thus science will be able to make efficient recommendations which will prove the high effectiveness of agricultural production development precisely in this region."

For the time being, only arguments are taking place over the problem that has developed. The fear exists that construction will not even commence this year on the irrigation system in the Barguzinskiy Basin. The amount planned for land reclamation this year has been cut almost in half. At the same time, the interests of the work require not only the creation of new kolkhozes and sovkhozes but also the strengthening of existing ones in Kurumkanskiy and Barguzinskiy Rayons.

The farms in the valley are presently producing only approximately 53 quintals of milk and 21 quintals of meat per 100 hectares of agricultural land, compared to 87 and 34 quintals respectively on the average for the Buryatskaya ASSR. And the potential possibilities of the valley are great. But even in terms of technical equipping and the mechanization of labor-consuming processes, especially in animal husbandry, Barguzinskiy and Kurumkanskiy Rayons are considerably inferior to other rayons throughout the republic.

We are of the opinion that the organization of capital construction for large-scale agrarian-industrial complexes in Khabarovskiy Kray warrants a great amount of attention. A firm program is being followed here aimed at accelerating the placing in operation of installations, all of which, as a rule, are being erected ahead of schedule and in a high quality manner. The construction of one of the largest broiler poultry factories for 10.5 million meat chicks and a far eastern poultry factory for the production of 140 million eggs was completed two and a half years ahead of schedule. The Druzhbinskiy complex for the raising and fattening of 10,000 young bulls was placed in operation ahead of schedule. Both poultry factories and also a swine raising combine are located, for all practical purposes, on the same territory and they share many engineering lines of communication, roads and a housing settlement and this brought about a savings of millions of rubles during their construction. The new enterprises are rapidly making reimbursement for the expenditures in terms of output.

Roughly the same type of agrarian zone is being created around the industrial city of Komsomol'sk-na-Amur. It will include an egg poultry factory, a swine raising and hothouse combines and specialized dairy sovkhozes. The construction of animal husbandry complexes for the raising of heifers is being carried out throughout the kray and farms are being created for the production of feed. The accelerated placing in operation of installations and their judicious use made it possible during the past five-year period to increase the production volume for animal husbandry products by 54 percent. But the construction of the complexes created the as yet unresolved problem of equipment operation. The enterprises of Goskomsel'khoztekhnika were not prepared for servicing the animal husbandry complexes and poultry factories.

Favorable conditions for strengthening the "rear areas" of BAM exist in the Yevreyskaya AO. Smidovichskiy and Birobidzhanskiy Rayons include the vast Ino-Birskiy Tract, where there are more than 300,000 hectares of free land. Grain crops, soybeans and various crops are being grown on the fields of the Volochayevskiy Sovkhoz. Compared to the northern regions, tremendous opportunities are available here for increasing agricultural production. Some scientists express an opinion concerning the need for constructing rice systems here, while others favor the development of multi-branch farms. The local planning organs favor the creation of specialized sovkhozes for the production of feed on irrigated lands. Sound conclusions are needed concerning the economic feasibility of each of the proposals and a long-term program for land development should be prepared.

We were told by the Amurskaya Oblast Party Committee that this entire oblast constitutes the food zone of BAM. Its farms will be capable in the future of supplying food products not only for the population of its cities and settlements but also partially for the Southern Yakutsk Territorial-Production Complex. It is necessary only to strengthen the logistical base for the kolkhozes and sovkhozes here, which in Amurskaya Oblast is developing more slowly than in neighboring regions.

All of these factors tend to strengthen the conclusion that the scientifically sound and economically tested recommendations concerning the development of agricultural development in the BAM zone have clearly fallen behind the times. In the absence of such recommendations, it is difficult to determine the order of priorities for the capital investments required for producing the highest return.

There is still one other problem requiring a great amount of attention: the development of subsidiary farms. This will be discussed in the next letter.

[17 Apr 81 p 2]

> [Text] The agricultural experience accumulated over a period of many years in the BAM Zone reveals that the food problem must be solved not only by means of specialized sovkhozes and the centralized delivery of products, but also with definite contributions being made by the labor collectives of industry and the local population. Many enterprises and construction organizations are in operation along the entire length of the route which [illegible] addition to their principal production oper[illegible] a considerable amount of attention to the development [illegible]ary agricultural departments. Many such farms are performing successfully even under the conditions which prevail in the north and they are supplementing the food resources substantially. However, there are still many difficulties which are preventing these farms from developing.

...And Subsidiary Farms

A large subdisiary farm is in operation at the Aviation Plant imeni Yu.A. Gagarin in Komsomol'sk-na-Amur. A poultry factory, winter hothouses and a dairy farm with all labor-consuming processes mechanized. This is in essence an entire sovkhoz, with all of its products intended for satisfying the needs of the collective. The subsidiary farm of the Urgal'skiy Mining Administration is well known in Khabarovskiy Kray. Its products are used not only by the miners but also by other residents of the mining settlement. And the farm of the Soviysk Mine in Verkhnebureinskiy Rayon in this same kray, which is located 150 kilometers to the north of BAM, fully satisfies the fresh milk requirements of the settlement's population of 1,500 people. This farm has its own swine and its own hothouse-grown vegetables.

"We consider the farm in Sofiysk to be a type of small agricultural complex" stated the 1st Secretary of the Verkhnebureinskiy Rayon Party Committee V.Ye. Cherenkov, "The experience accumulated in creating such complexes will be actively introduced into operations at all small stations of BAM. Each settlement must have 50-60 cows, 100-200 swine, a hothouse and a garden. A start has been made: pigsties are being built at the Suluk, Alonka, Soloni and Gerbi stations. Indeed, food remnants can be used extensively for the fattening of swine."

Such an approach to solving the problems at small BAM stations can only be welcomed. The more rapidly that this experience is made available to others, the greater will be the success achieved in carrying out the food program. But by no means is the need for creating agricultural departments recognized by all. In particular, there is the indisputable truth that the creation of subsidiary farms requires that thought be given first of all to procuring feed for the livestock to be maintained. There are some who immediately turn to the state for feed, although they are aware that there is not enough for the kolkhozes and sovkhozes. This is not the problem. A subsidiary farm must have its own feed base. But during the planning of the Baykal-Amur Trunk Line, proper consideration was not given to the agricultural development of the zone either from a broad or narrow standpoint. The BAM workers themselves maintain that they are not against the construction of pigsties, hothouses and other installations. However, no provision was made for this in the estimates, in the funds or with regard to the materials required.

We can only regret the time that has been wasted and thereafter attempt to make up for the time lost. Many fine examples of subsidiary farms being organized in this zone could be cited. Fine experience has been accumulated in this regard by the enterprises of Mintsvetmet [Ministry of Non-Ferrous Metallurgy] and by timber farms, which have learned how to make skilful use of local feed resources. But all those whom we met at BAM were firmly convinced that such experience must be employed in a bolder manner by the builders of the trunk line and its operational personnel and by those concerned with expanding production. As yet, none of the above are displaying special initiative in this regard.

Of the four hothouse farms authorized to be built for the Ministry of Railways -- at Ust'-Kut, Severobaykal'sk, Tynda and Urgal -- only the one at Tynda is under construction. Yes and this is not the result of the realization of an efficient program, but rather it derives more from the initiative displayed by the leaders of the Mostostroy-10 Trust.

The attitude displayed towards its subsidary farm by the urs [Administration of Workers' Supply] of Bamstroyput' at Tynda serves as an example of indifference to agricultural matters. Four years ago, a task was even issued to the Amurgiprosel'khozstroy Institute for planning the subsidiary farm. But having paid out several thousand rubles for the survey work, Bamstroyput' subsequently refused to have any dealings with the planners. At the present time, this subsidiary farm appears only as a field of several tens of hectares of land, with a summer hitchen and a shed. On this garden at Tynda, they are growing green onions, radishes, greens and parsley -- the greens which are being imported from miles and miles away are required in fresh form. But, according to agronomist Yu.M. Belousov, the owner of a small garden is unable to carry out weed control work on even these few hectares. Moreover, difficulties can arise in harvesting the small crop obtained from them. Indeed, it is possible to construct plastic hothouses here and to grow considerably greater quantities of vitamin-containing products.

At times, one hears that the builders are here on a temporary basis and that they will soon depart and thus more concern should be shown for the permanent residents and for those who operate the railroad. Thought should be given in advance to the problem of retaining the personnel in these areas. And this applies in particular to the administration of the Baykal-Amur Railroad. Prior to the completion of the construction operations, the railroad workers will be provided for based upon the norms established for the builders. But what about thereafter? Has everything been thought out in this regard and have all of the reserves been placed in operation? Alas, this has not been done.

Let us begin with the planning for the BAM stations and housing settlements. The authors of the plans called for many items and especially one -- how to achieve personnel stability and ensure their everyday attachment to their homes. Fortunately, the erection in the various areas of nine and five-story apartment buildings in relatively small settlements was rejected in a timely manner. But not in all areas. At stations of the small BAM which have already been in existence for several years, we encountered settlements having 4-6 five-story buildings in which the entire population was residing. At Belen'kaya Station, 380 individuals were living in four such buildings. Animal husbandry products are delivered here and yet the local residents did not see any potatoes or vegetables last summer, not even during the harvest season. The station is located only 40 kilometers from Tynda and vegetables could be brought in by motor transport, but this would be difficult even using the highly navigable UAZ vehicles. Alas, the builders made no provision for public roads.

It is obvious that potatoes and various garden products could be grown locally. But this is hindered on the one hand by the multi-story life style and, on the other, by the absence of the required conditions. Last spring, at Belen'kaya Station, 30 gardeners combined their efforts in working the land and yet no fruitful results ensued.

"None of this was well thought out" frankly stated the chairman of the Belen'kaya Settlement Soviet M.S. Sofronova, "There are no buildings for the maintenance of somestic livestock. True, they built their own rabbit hutches. But in the absence of private plots, the people feel that they are only temporary residents.

By no means have all of the settlements been erected along the BAM and during their construction consideration must necessarily be given to the wishes of the people who will live here for many years. Certainly, good conditions are not to be found in all areas. Conditions, for example, such as are found at Komsomol'sk-na-Amur, Berezovskaya and Urgal in the eastern sector of the trunk line, where the people are performing successful work in both gardening and horticulture. However, opportunities are available everywhere here for growing potatoes and vegetables.

The use of these reserves is still fully dependent upon the initiative displayed by the builders themselves. For example, the Volgograd builders would like to erect Dzhamka Station and have their own gardens -- and supply land for the gardens. But why is it that such initiative was not included in the plans? In this manner the builders having the greatest potential would leave behind, for the benefit of the railroad workers, fine buildings for subsidiary farms and good land

However, it does not always turn out this way. The leaders of construction subunits display initiative with regard to creating their own agricultural departments, however they encounter obstacles placed in their path by GlavBAMstroy [Main Administration for the Construction of the Baykal-Amur Trunk Line] and the USSR Ministry of Transport Construction. For example, the chief of SMP-607, V.D.

Stepanenko, one of the first in Severobaykal'sk, insisted on organizing a subsidiary farm despite the great difficulties involved. A garden was created, a small hothouse and pigsty were built, fruit trees were planted and they began growing flowers during the winter. They invited agronomist L.A. Matyushkina from Irkutsk and assigned her to work as a painter.

"Legally we are not authorized to have specialists on our subsidiary farms and none are included in the table of organization. We have to employ round-about ways and certainly we do not always succeed" stated V.D. Stepanenko, "And indeed we give thought to expanding the farm. In order to produce more meat, we must have 500 swine instead of just 50. We must create the conditions required for our own feed base. We must build a hothouse with its own boiler, so that we can grow vegetables the year round. The time is at have for legalizing the subsidiary farms and for including those people who service them in the tables of organization."

Last year, this farm, operating under northern conditions involving permafrost, supplied sufficient vegetables for its own collective and it also sold a considerable quantity to neighboring collectives. How is it possible not to support such initiative? The chiefs of other sectors of the Nizhneangarsktransstroy Trust and the BAMtonnel'stroy Administration also expressed their resentment. Unfortunately however, the opinion still persists among the leaders of GlavBAMstroy and its subordinate subunits that "Our work is to lay down the route and not to breed swine or grow cabbage." Supposedly one excludes the other!

Such an opinion is obviously a reasonable one: the resources allocated for organizing subsidiary farms are concentrated on the construction of a particular installation: hothouses, a pigsty or a dairy complex. Thus 750,000 rubles were allocated to the Nizhneangarsktransstroy Trust for the development of subsidiary farms. But it is still not known just how these funds were distributed. Those specialists are correct who assert that: here, just as with the principal production effort, there must be good planning, efficient fulfillment of each program planned and specific schedules for placing installations in operation. At such a time, the small agricultural "complexes" will begin to be of great assistance in implementing the food program in the BAM zone.

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PROSPECTS FOR SOVIET AGRICULTURAL DEVELOPMENT IN 11TH FIVE-YEAR PLAN

Moscow IZVESTIYA TIMERYAZEVSKOY SEL'SKOKHOZYAYSTVENNOY AKADEMII in Russian No 2, Mar-Apr 81 (manuscript received 23 Dec 80) pp 3-10

[Article by S. S. Sergeyev, Statistics Department: "USSR Agriculture at a New Stage of Development"]

[Text] The Soviet Union concludes each five-year plan with impressive victories in the economic and social spheres of the society's life and before each coming five-year plan the communist party sets new and even more large-scale goals. The successful fulfillment of these goals secures the powerful economic and scientific-technical potential that has been created and developed in the USSR as well as the mechanism of administration, which continues to be improved and which has been called upon to utilize the possibilities and advantages of developed socialism to the fullest.

An important stage in the development of communism will be the fulfillment of significant economic and social goals presented in "The Basic Directions for the Economic and Social Development of the USSR in 1981-1985 and in the Period Until 1990." This document has accumulated the rich experience of preceding five-year plans and has considered the real tendencies of scientific-technical progress and the requirements of the economic strategy worked out by the party. The highest aim of the economic strategy realized by the communist party is the "steadfast improvement of the material and cultural level of people's lives, the creation of the best conditions for the overall development of individuality on the basis of the continued growth in the effectiveness of public production, the growth of labor productivity and the growth of social and labor activeness of Soviet people."[1]

In the course of 1981-1990 it is planned to implement an entire system of measures that will secure the continued and unique social and economic progress of society and that will ensure thorough qualitative changes in the material-technical base, in labor and in all spheres of public life.

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[1] "The Basic Directions for the Economic and Social Development of the USSR in 1981-1985 and in the Period Until 1990," PRAVDA, 2 Dec 80.

Important problems must be solved during the 11th Five-Year Plan, the time of accelerated scientific-technical progress and intensified production, of the economical utilization of all types of resources and of improved work quality. National income, which is utilized for consumption and savings, will increase by 18-20 percent during the five-year plan.

Agriculture is of primary importance in raising the material standard of living of the people and in satisfying their need for high-quality foodstuffs. The communist party has developed and is consistently implementing a long-term agrarian program which has as its aim the transformation of this central sector of the agro-industrial complex into a highly intensive, industrialized and very efficient branch. In accordance with this it is planned to consistently increase capital investments into agriculture, to create and develop a powerful industrial sector by supplying it with highly productive technically-improved production means and to create a corresponding industrial-trade sector for the purpose of industrially processing raw agricultural products and high-quality consumer goods and of delivering them to the consumer in a whole and preserved state. In continuing to develop the long-term agrarian program and in improving measures to ensure this, the Basic Directions foresee "the overall development of the agroindustrial foodstuffs complex, the proportional and balanced growth of agriculture as well as of branches of industry, the food industry and economies that are related to the procurement, storage, shipment and processing of agricultural products."[2]

In the 15 years that have passed since the March 1965 Plenum of the CPSU Central Committee, USSR agriculture has made a great step forward. On the basis of intensification production volume has increased and in the course of industrialization the productivity of agricultural labor has grown. During the years of the 10th Five-Year Plan, despite the extremely unfavorable meteorological conditions, the average annual production volume of the branch increased by 9 percent in comparison to the levels of the Ninth Five-Year Plan, including an 11.3 percent increase for grain. On the average for 1971-1980 the agricultural production output was 29.7 percent higher than in 1961-1970; grain production was 21.9 percent greater.

In agriculture and in the branches serving it serious qualitative improvements have been made, thereby creating the material conditions for accelerating the pace of their development and for raising their effectiveness. One of the more important results of the last 15 years is the continued development of the complex of branches within the first public subdivision, the sub-branches of which are totally or partially involved in agriculture. This includes the branches of tractor and agricultural machine construction, those involved in the production of machines and equipment for livestock raising and feed production, in agricultural and reclamation construction, the microbiological industry and the industry that manufactures mineral fertilizers and poisonous chemicals. A significant portion of the fuel-processing and automobile industry, of the electrical power industry and a number of other branches. In economic terms in the final analysis many other branches of industry also serve agriculture (ferrous and non-ferrous metallurgy, the oil-processing industry, metallurgy, forestry and wood-processing industry, the building materials industry, etc.) by providing raw materials and parts without which the aforementioned branches could not operate.

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[2] Ibid.

In preceding years the branches of the food and light industry, which process agricultural raw materials into finished consumer products, have been developed considerably. An important role is also played by the sub-branches of complex or specialized production-technical services (Goskomsel'khoztekhnika [State Committee of the Agricultural Equipment Association], Soyuzagrokhimiya [All-Union Agrochemical Association], agricultural aviation) and by infrastructural branches that realize the shipment of the means of production and agricultural products (transport), the sale of products to the population, etc. According to the data of the USSR Central Statistical Administration for the interbranch account balance of 1972, the agroindustrial complex as a whole produced 37.5 percent of the total public product and over half of the total final product. Almost half of all the workers in the material production sphere work in this complex and about one-third of all fixed production capital is concentrated here.[3]

The development of the industrial sector of the country which serves agriculture has enabled us to increase the number of tractors in agriculture by 1.6 times in the period from 1965 to 1979. Their total capacity increased by a factor of 2.4. The number of trucks increased by a factor of 1.66 and their capacity grew from 2.7 to 3.6 tons.

There has been a significant growth in the nomenclature and quantity of agricultural machines, including machines for livestock raising and irrigation, which has enabled farms to move to complex mechanization in the production of an entire series of products. Between 1965 and 1979 the supply of mineral fertilizer increased by a factor of 2.6. The growth of technical supplies for agriculture and the increase in available power in the public economy (by a factor of 2.5 per 100 hectares of crops and of 3 per worker) resulted in a significant increase in the level of mechanization of a number of labor-consuming processes in farming. For example, the percent of sugar beets harvested by combines increased from 65 to 95 percent; potatoes harvested by combines--from 11 to 43 percent; flax pulled by machines--from 56 to 92 percent; and cotton harvested by machine--from 22 to 53 percent.

During this same period mechanized milking of cows in sovkhozes, kolkhozes and interfarm enterprises increased from 27 to 89 percent, the mechanized supply of water on farms raising large-horned cattle, hogs and poultry--from 51-65 to 88-95 percent; the mechanized distribution of feed--from 3-15 to 42-83 percent; the mechanized removal of manure from facilities--from 7-12 to 72-85 percent. This was one of the main factors in the growth of labor productivity. Direct labor expenditures per 1 quintal of production were on the average lower in 1976-1979 than in 1966-1970 in the following amounts: in grain production--by 21 percent in sovkhozes and by 48 percent in kolkhozes; sugar beets--by 15 and 32 percent respectively; potatoes and outside vegetables--by 22-28 and 35-38 percent. During the same period direct labor expenditures per 1 quintal of milk in sovkhozes dropped by 20 percent, per 1 quintal of weight gain in large-horned cattle--by 17 percent, per 1 quintal of weight gain in hogs--by 37 percent, per dozen eggs--by a factor of 3. In kolkhozes labor expenditures decreased by 29, 27 and 40 percent and by a factor of 2.1. Nevertheless, on the whole the pace of increased labor productivity cannot be considered satisfactory. The level of complex mechanization in livestock raising is still low (39 percent in cattle raising, 61 percent in hog raising and 69 percent in poultry raising).

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[3] VOPROSY EKONOMIKI, 1975, No 4.

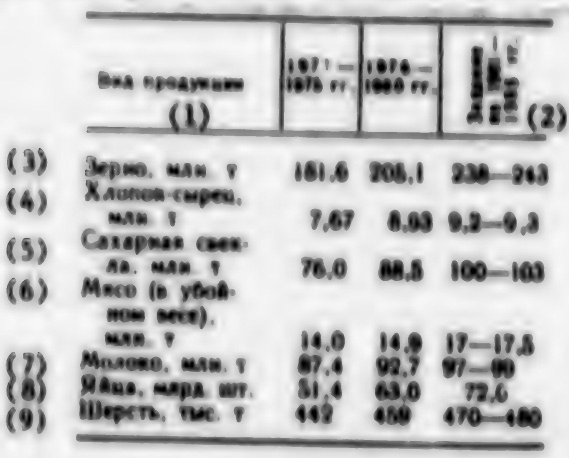
The industrialization of agriculture has its own special features that are related to the fact that many fairly complex production operations are performed by mobile technology and that a significant portion of the equipment is used in an aggressive environment. Moreover, in view of the biological nature of the objects (soil, plants and animals) which the equipment affects, it is essential to maintain rigid limits. Because these special features were not sufficiently considered, many designs are still not perfect by far, are heavy, are undependable in operation and are not efficient enough in traveling the same fields several times even during a single campaign (sowing, harvesting, crop care). The removal of machines having antiquated designs from the manufacturing process is behind schedule and the new tractors (for example K-701, T-150K and others) are manufactured for long periods of time without a sufficient number of accessory working machines, which results in a great underutilization of their capacities.

Organizations that provide production-technical services for agriculture become self-sufficient commercial subdivisions with narrow departmental interests in some cases instead of fully adapting their functions to the needs of agricultural production.

The practical experience of past years has shown that a one-time coordination of programs on the development of branches of the agroindustrial complex (primarily agriculture and related branches) in long-term and to a certain degree in annual planning is obviously insufficient; in view of the absence of a single effective administration it does not secure complete accord and proportionality among all sections of the complex or the achievement of the final result as the ultimate aim of all branches in their activities. For this reason the Basic Directions set a general goal for the agroindustrial complex--to dependably supply the country with foodstuffs and agricultural raw materials. In order to fulfill this goal and to successfully realize the foodstuffs program it is essential, as indicated in the Basic Directions, to secure central planning for the development of the agroindustrial complex, to significantly strengthen its material-technical base and to implement effective management of a single foodstuffs complex. The economic ties between branches must be improved, there must be mutual interactions to increase agricultural production output, to improve the preservation of products, their transport, processing and delivery to the consumer. The management of the production, storage, processing, delivery and sale of agricultural products must be organized in such a way as to interest the workers of each link and each stage of this single interrelated process in supplying the consumer with high-quality products.

In the course of the 11th Five-Year Plan agriculture, in close cooperation with other branches of the agroindustrial complex, must increase average annual agricultural production by 12-14 percent while increasing labor productivity in public production by 22-24 percent. The goals foreseen by the Basic Directions for the production of the most important types of farm and animal products as compared with production volumes for the last two five-year plans are presented in the table.

Average Annual Output of Basic
Types of Agricultural Products in the USSR



	Вид продукции (1)	1971—1975 гг.	1976—1980 гг.	[illegible] (2)
(3)	Зерно, млн. т	181,6	205,1	238—243
(4)	Хлопок-сырец, млн. т	7,67	8,93	9,2—9,3
(5)	Сахарная свекла, млн. т	76,0	88,5	100—103
(6)	Мясо (в убойном весе), млн. т	14,0	14,8	17—17,5
(7)	Молоко, млн. т	87,4	92,7	97—99
(8)	Яйца, млрд. шт.	51,4	63,0	72,0
(9)	Шерсть, тыс. т	442	459	470—480

Key to Table:

1. Type of product
2. Plan for 1981-1985
3. Grain, million of tons
4. Cotton raw materials, millions of tons
5. Sugar beets, millions of tons
6. Meat (slaughter weight), millions of tons
7. Milk, millions of tons
8. Eggs, billions of
9. Wool, thousands of tons

Taking into consideration the great importance of legume crops in increasing protein production, it is planned to increase their average annual grain production to 14-15 million tons. There will be an increase in the production and procurement of millet, buckwheat, rye, rice, hard and strong wheat varieties, corn and grain forage crops. It is also planned to secure the continued growth of production, the expansion of the assortment and the improvement of the quality of vegetables and melon crops, to improve the productivity and quality of lime bast crops, sunflower seeds, crown flax, clover, essential oil and other technical crops and medicinal plants, to increase the production of fruits, berries, grapes and tea while simultaneously improving the variety and breed composition of plants. The hothouse economy and the production of vegetables in enclosed areas will expand primarily through the utilization of thermal wastes from industry and thermal waters.

This is a very intensive goal, especially for grain and meat. Nevertheless, it can be fulfilled. Already in 1977 gross grain yield in the USSR comprised 237.4 million tons. However, this was a year with favorable meteorological conditions. Now it is essential to fulfill the goals not by depending on especially favorable weather conditions but by means of a system of measures that will increase soil fertility and that will secure a higher level of intensity in farming and in all agricultural production. The effectiveness of such measures is confirmed not only by scientific data but by mass experience in leading enterprises as well. The dynamic development of agriculture, an improvement in the effectiveness of all its branches and the growth of production with the simultaneous improvement in production quality, which are foreseen in the Basic Directions, are impossible without the persistent implementation of the earlier policies aimed at the overall intensification of agricultural production.

The overall intensification of agricultural production presupposes first the consistent growth of capital investments which secure the basic directions of intensification (mechanization, reclamation, chemicalization). Expanded socialist reproduction in modern agriculture requires considerable production accumulations, extensive deliveries of technology, a large volume of construction-installation work, etc. The communist party is giving special attention to this problem and is securing its fair share of capital investments for agriculture (no less that 2.7 percent). During the years of the 10th Five-Year Plan capital investments in agriculture for the entire complex of operations comprised over 170 billion rubles. Agriculture has received 1.8 million tractors, over 1.3 million trucks, 540,000 grain combines and a great deal of other equipment for livestock raising and farming. The volume of deliveries of powerful tractors has increased, highly efficient KSK-100 feed-harvesting combines are being manufactured, as are efficient beet-harvesting complexes (RM-6, RKS-6) and tomato harvesting machinery (SKT-2), etc.

During the 10th Five-Year Plan 3.8 million irrigated hectares and 3.7 million hectares of drained lands were put into operation.

During the 11th Five-Year Plan, as in the 10th, agriculture will be allocated considerable capital investments which must be utilized first to improve the fertility of the soil, to create a stable feed base, to build storehouses and facilities to process products, to renovate and expand livestock-raising facilities and other production structures, and to construct residential and cultural-consumer facilities in villages. The technical reequipping of agriculture will continue on the basis of new and improved technology. Our goal is to complete the complex mechanization of sugar beet, cotton raw material and crown flax production, to apply organic and mineral fertilizers and to protect plants in the course of the five-year plan. It is also planned to considerably raise the level of mechanization for the production of vegetables, potatoes, fruits, feeds and animal products.

During the new five-year plan it is planned to provide agriculture with 1.8 million tractors having a larger average capacity than previous tractors, 550,000 grain combines and a large quantity of other technology. Agricultural machine construction must organize the manufacture of highly productive technological complexes of machines to secure the introduction of industrial technological methods for raising corn, sugar beets, sunflowers, soybeans, potatoes and other crops, and begin the manufacturing of grain harvesting combines and tractor-cultivators that meet all modern technical requirements. It must also expand the production of combination soil-cultivation and sowing machines, counter-erosion technology, machines for vegetable farming and orchards, self-propelled feed-harvesting machines, highly productive grain-cleaning and grain-drying units and highly productive machines for the preparation, shipment and application into the soil of fertilizer. It is planned to increase the output of highly effective machinery and equipment for the complex mechanization of livestock raising.

During the 11th Five-Year Plan with the use of state capital investments 3.4-3.6 million hectares of irrigated and 3.7-3.9 million hectares of drained lands will be put into operation and 26-28 million hectares of pastures will be flooded in desert, semi-desert and mountainous regions.

For the continued intensification of agriculture it is important to accelerate scientific-technical progress in agriculture through all possible outlets and in every form available when operating newly-introduced objects. In order to do this it is very important to consider the basic changes that are occurring within the branch itself. If we examine the technological aspect, the most important qualitative changes include the following.

1. In agricultural production a system of complex buildings and structures and a very developed system of machines and mechanisms, etc. has appeared. The aforementioned industrialization is occurring on the basis of a significant growth in capital investments, which at the given level results in a definite growth of capital-output ratio. At the same time the level of supplies of many structures, modern seed-storage facilities and a number of complex machines and some equipment are still insignificant and the pace of reequipping is being hindered due to the shortage of resources. For this reason in the interest of accelerating technical reconstruction and with the goal of increasing the capital-output ratio the efficiency of the system of labor resources itself and the search for more economic variants of technical reequipping are becoming more important. A most urgent problem is constructing production structures in livestock raising more cheaply.

2. There have been important changes in technology, the essence of which can be expressed in the following formula: Machines and mechanisms as well as the means of chemization have been added to the system "man--soil--plant" ("man--animal") which was previously characterized by the direct action of man using simple tools and as a result the system has been transformed into "man--machine--soil--plant" ("man--machine--animal"). This had several consequences: the rapid growth of cadres of machine operators and the necessity of corresponding engineering training for technologists, the necessity of considering the biological nature of plants and animals when designing machine construction and a certain degree of adaptation of plants and animals to machine production; the need for a powerful apparatus of technical services for the system of machines and mechanisms has arisen.

3. The effective organization of modern agricultural production is possible only with a scientific foundation and presupposes the direct participation of trained specialists and scientific cadres in production. For this reason all scientific institutions with an agricultural profile must now be closely tied with agricultural production and act as its agent.

Thus, at the present time in addition to increasing the level of investments, it has become important for the development of intensification to also improve each element within the system of investments and to improve specific agrotechnical and zootechnical production investment forms which systematically have appeared in the form of specific prescribed technology.

In economic terms, the most important qualitative changes that have occurred involve the fact that agricultural production output is proceeding under conditions in which there is more and more of a division of labor, growing production specialization and hence moreand more varied interbranch ties. This means that success and production results are created to a significant degree in related branches. The development of a division of labor and specialization and the needs of production concentration have made it imperative to cooperate in production, have given rise to various types of interfarm enterprises and associations as well as to different types of processes of agroindustrial integration.

The priority aims in the area of agricultural economy are the continued improvement of organization of labor and production in kolkhozes and sovkhozes, the strengthening of economic calculations, the raising of labor productivity, a decrease in expenditures per unit of production and correspondingly an increase in the profitability of agricultural production.

The biological link (the plant or the animal) remains the central link within the technological system of agricultural production, and the demands being made upon this link under conditions of overall intensification and mechanization are growing sharply. All of the means of mechanization, chemization, reclamation, etc. play an important, but in the final analysis, a subserviant role with regard to plants and animals. Whereas an improvement in the quality of any of these means results in a particular effect (a higher productivity of labor in these operations, less fuel consumption, etc.), an improvement in the quality of biological means of labor, in plants and in animals increases the effectiveness of all the means of production and labor in farming and livestock raising, i.e. has an integral effect. Without the improvement of plants and animals themselves increased investments into farming and livestock raising may not yield the expected results on a particular level. For this reason one of the most urgent tasks is to introduce new highly efficient varieties of plants and breeds of animals that are adapted to machine technology, to reproduce them rapidly and systematically, and to organize their introduction into production.

The Basic Directions include the task of developing new plant varieties and animal breeds among the most important scientific-technical problems.

The primary and most important branch of agriculture is plant-growing, which yields not only grain for foodstuffs, but feed as well. For this reason, although the improvement in feeding rations is moving in the direction of increasing the proportion of high-quality livestock products and of increasing plant-farming products, the intensification of farming remains the key problem. In order to fully satisfy demand for animal products it is essential to sharply increase the production of grain, especially forage, as well as of special feed crops and to provide dependable supplies of vegetable protein for the branch of livestock raising. A radical improvement in feed production, the satisfaction of the need for feeds in public livestock raising as well as in the private sector are now urgent problems.

The Basic Directions foresee the completion of the development of a complex program for creating a dependable and balanced feed base for livestock raising and its realization. Feed production in kolkhozes and sovkhozes should not be a subsidiary enterprise, as we frequently find today, but rather a model specialized branch of the enterprise supplied with the necessary means of production and cadres. In addition to raising the productivity of feed crops, haylands and pastures it is essential to improve the quality of all feed crops and to secure a sharp drop in losses of nutrients during harvesting and storage during this five-year plan.

In recent years there has been a certain underevaluation of the procurement of good hay, and there have been many cases in which low-quality haylage and silage have been prepared. In planning the form of feed procurement (hay, haylage, silage, etc.), a consideration should be made of the needs of the animals, of meteorological conditions during the harvest period and of the availability of the necessary technical means. Appropriate technical supplies will enable us to alter the various forms of feed procurement depending on the harvesting conditions so that feed would be of high quality regardless of weather. With this purpose, the Basic Directions foresees the accelerated construction of model storehouses for silage, haylage, hay, grass meal, root crops and other feeds in sovkhozes and kolkhozes.

The main specific resource in agricultural production, especially in plant-growing, is land. For this reason, in the struggle for productivity and correspondingly for an increase in the gross yield of products, the overall improvement in soil fertility acquires great significance.

All types of reclamation--irrigation, drainage, liming, gypsum application, etc.--play an important role in improving the fertility of soil. It is necessary to raise the technical level and quality of reclamation construction, to secure the overall improvement in the effectiveness of utilizing irrigated and drained lands and to curtail the schedule for achieving planned productivity. Irrigated and drained lands will not be productive if they are not assimilated agriculturally on schedule, if they are not cultivated and if large doses of fertilizer are not applied. In connection with this, the Basic Directions foresee the conclusion of complex operations involving land reclamation and agricultural assimilation. A great deal of attention must be directed at improving the reclamation conditions of the existing fund of irrigated and drained lands, existing systems must be reconstructed at a rapid pace and salinity and acidity in soil must be eliminated.

The most effective type of investment is mineral and organic fertilizer. The growth of the use of mineral fertilizer during the five-year plan will be considerable. However, this is not sufficient. It is essential to maximally utilize organic fertilizer resources. Mass data from leading enterprises shows that they apply significantly more such fertilizer. The Basic Directions foresee the delivery of no fewer than 115 million tons of mineral fertilizer in standard units (26.7 million tons with 100 percent nutrient content) to agriculture in 1985, increasing the use of organic fertilizers to 1-1.2 billion tons by 1985, significantly improving their utilization and sharply curtailing losses.

The Basic Directions set goals of improving the system of seed farming of agricultural crops, of accelerating its transition to an industrial base, of introducing new highly productive varieties into production more rapidly and of increasing seed quality. For this it is essential to complete the creation of specialized, highly-intensive sub-branches in plant growing that will join breeding centers, experimental stations and model seed-farming enterprises.

A great deal of attention must be directed at increasing the stability of farming. The complexity of the given task is attested to by the fact that the average productivity of grains (in 1968-1978) and potatoes (1968-1977) on the entire area of variety plots in the USSR, which exceeded the average productivity in the country's enterprises by a factor of 1.6-1.8, was altered according to year to relatively the same degree as the productivity of enterprises with only a somewhat smaller value in the variation coefficient (11.7 instead of 13.7 percent, and 8.1 instead of 8.7 percent).

Livestock raising continues to be a branch that requires special attention. The Basic Directions call for securing a continued improvement in production output of animal products and in the productivity of livestock and fowl. The most accessible resource for increasing productivity is the improvement of feeding. The country's agriculture experiences great losses as a result of the underfeeding of livestock since feed expenditures and other production expenditures per unit of production increase considerably in such a case. Barrenness in cows brings great losses--the output of calves per 100 cows does not exceed 80 percent. For this reason one of our goals is to significantly increase the reproductive capability of livestock and the preservation of the herd.

One of our primary goals is to improve the qualitative composition of the herd by introducing new highly productive breeds that meet the needs of machine production and by forcing the development of progeny from animals with a high potential productivity by means of artificial insemination. Breeding centers, breeding plants and breeding enterprises, united in a special specialized sub-branch, must secure a sharp increase in productivity in livestock raising.

The Basic Directions foresee a greater use of the possibilities for production growth by means of the intensive raising and fattening of large-horned calves, of expanding meat livestock and poultry raising and of intensively developing hog raising by increasing the capacities of hog-raising facilities of the industrial type. There should be an overall increase in the production of lamb, wool, karakul and other products of sheep raising.

Livestock complexes for the production of beef and pork have already demonstrated their great effectiveness. The average daily weight gain of animals being fattened in sovkhoz, kolkhoz and interfarm complexes in the RSFSR for the purpose of beef production was 30 percent higher in 1979 than in sovkhozes, kolkhozes and interfarm enterprises in the RSFSR; for the purpose of pork production--28 percent higher. At the same time the cost of production in complexes was lower (for beef in sovkhoz complexes and kolkhoz complexes--by 35 and 27 percent respectively; for pork--by 30 and 20 percent respectively). At the same time better use should be made of the possibilities of producing pork on the farms of non-specialized enterprises and in the private sector, which as a rule has large decentralized feed sources (food wastes, non-standard potatoes, etc.) and supplementary labor resources.

Two serious problems are increasing the milk productivity of cows and improving the quality of the milk. Livestock complexes for milk production still do not differ greatly from kolkhoz and sovkhoz dairy farms with regard to the average productivity of cows and the cost of the milk, although a higher labor productivity has been achieved. The lack of a difference between complexes and farms is the consequencee of a weak feed base and other shortcomings. Meanwhile, there are sufficient numbers of examples in which enterprises with large concentrations of cows consistently and rapidly increase the productivity of the dairy herd. The following data attests to the possibilities for significant growth in dairy productivity. In the Kuybyshevskiy Sovkhoz, Moscow Oblast, average milk yield during the Eighth Five-Year Plan was 29.7 quintals, during the Ninth Five-Year Plan--33.8 quintals and in 1976-1979--40.3 quintals; in Leninets Sovkhoz of the same oblast the corresponding figures were 33.8, 37.9 and 42.8; in the Moskovskiy Sovkhoz--36.4, 40.0 and 42.0 quintals; and in Matveyevskiy Sovkhoz--34.7, 42.3 and 49.5 quintals. The milk productivity of cows increased in a number of sovkhozes as well from a level of 40 quintals and more during the Eighth Five-Year Plan. For example, in the Voronovo, Pamyat' Il'icha, Konstantinovo and Kholmogorka sovkhozes milk yield per cow in the dairy herd increased from 43.0, 40.9, 40.5 and 43.1 to 51.0, 46.1, 46.8 and 48.5 quintals respectively. The material basis for the increased productivity of animals in all of these enterprises was better feeding and the consistent improvement in the quality of the dairy herd. It is characteristic that in most of the aforementioned sovkhozes productivity increased while the size of the dairy herd also increased.

A very serious task is the struggle against losses of agricultural products, which should be conducted at the stage when the harvest is formed or in the process of producing animal products as well as once the products are obtained, stored and used. At the present time there are particularly large losses of potatoes, vegetables, melons, fruits and berries. For this reason it is planned to improve the production, procurement, storage, processing and sale of potatoes and fruit and vegetable products. It is planned to expand the construction of refrigerators, storehouses, processing enterprises and shops, especially in places where fruit and vegetable products are produced. Since this sphere belongs to agriculture as well as the food industry and procurement it is very important to strictly coordinate such construction in order to avoid the underloading of new fruit and vegetable storehouses, refrigerators, etc. while at the same time there is an acute shortage of these structures.

While continuing the technical reequipping of agriculture, providing it with new and more productive technology, it is essential to significantly improve the utilization of tractors, combines and other machines. Mass data attests to the great possibilities of increasing shift and annual output for tractors. A selective survey conducted by the USSR Central Statistical Administration in 1978 showed that the annual output per standard tractor in sovkhozes having 101-140 machine operators per 100 tractors (tractor operators-machinists, tractor operators and combine operators) was 30.6 percent, and with an even greater number of machine operators--42.2 percent, higher than in sovkhozes where this number did not exceed 100 persons. In kolkhozes the aforementioned excess comprised 33.3 and 45.8 percent respectively. The output of the machine and tractor fleet depends greatly on the organizational-production form of utilizing technology. In the production associations on mechanization of the Moldavian SSR the output per tractor increased significantly over a short period of time as a result of a better organization for utilizing and technicallly servicing the machine and tractor fleet.

There must be a definite improvement in the use of other labor resources, above all livestock raising facilities. Despite their general shortage, in a number of enterprises a significant number of livestock places in model hog pens, poultry yards and facilities for fattening large-horned cattle remain empty, especially during the winter period. This sharply decreases the utilization coefficient of fixed capital.

An urgent task is that of raising the effectiveness of utilizing perennial plants. The Basic Directions foresee the renovation of existing orchards and vineyards in addition to continuing the work of creating new ones.

In securing the successful fulfillment of the foodstuffs program it is important to improve organizational-production forms and to consistently develop specialization and concentration in agricultural production on the basis of interfarm cooperation and agroindustrial integration. The selection of organizational-production forms must be made with a consideration of the tendencies in scientific-technical progress, of the general level of development of production forces and of the unique features of local conditions. In some regions large interfarm specialized enterprises were created within the branch of livestock raising; here the cooperating enterprises strengthen specialization in fruit and grape production (Moldavian SSR). In other regions the cooperative association of enterprises, which are basically branches of livestock raising, resulted in a strengthening of interfarm specialization in a particular branch of livestock raising (Baltic states). In a number of regions (Siberia, Krasnodarskiy Kray, others) where the size of the enterprise allows it to have large specialized subdivisions, intraenterprise cooperation is being strengthened.

In seed farming and pedigree livestock raising scientific-production associations including breeding centers, experimental stations, breeding plants, seed-farming enterprises and breeding enterprises, are taking hold. In cultivating essential-oil producing plants,in viticulture and wine-making, in fruit and vegetable farming, where agricultural production is technically related to the food industry, processes of agroindustrial integration have been developed. Special integration forms have developed in a number of territorial-production complexes (TPK), in which the agrarian sector has taken an important place, supplying the population of the TPK with fresh produce on the basis of a more effective utilization of land resources and of the infrastructure created within the TPK zone.

During the 11th Five-Year Plan we must make use of all the possibilities for the production of meat, milk, potatoes, vegetables and fruit in the subsidiary farms of enterprises and institutions as well as in the private sector. Fruit and vegetable products from associations of workers and employees can be of considerable importance.

The successful fulfillment of assignments in farming and livestock raising presupposes the correct distribution of production according to the zones of the country with a consideration of natural and economic conditions, the improvement of enterprise systems in each zone with the distribution of production volume among enterprises and associations in accordance with their planned specialization. This goal can be achieved more successfully if a zonal system of enterprise management is developed to foresee the most efficent system of enterprise for the zone having a scientifically-based structure, a more effective production technology and appropriate supplies of technological machine complexes, etc. The Basic Directions emphasize that the utilization of zonal scientifically-based systems of economic management will be tha basis for solving the most important problems in farming. In connection with this the necessity arises to strengthen the responsibility of directors and specialists, scientific-research institutions, and party, soviet and economic organs for introducing these systems into production.

During the 11th Five-Year Plan work will continue to improve agricultural management at all levels. We have some interesting experience in improving management in the rayon link in Vil'yandi, Estonian SSR, where on a cost-accounting basis an inter-enterprise association was formed, encompassing all of the agricultural enterprises of the region, the departments of Goskomsel'khoztekhnika [State Committee of the

Agricultural Equipment Association], the interkolkhoz construction organization, the meat combine and other organizations that are related to agriculture. The effectiveness of new forms in this link depend to a great extent on how well coordination is effected among the subdivisions of various departments on an oblast and republic level, as well as in the entire agroindustrial complex of the nation.

During the new five-year plan a system of measures will be introduced to improve planning and economic stimulation in agricultural production and to make assignments to enterprises and associations with a consideration of specialization and natural and economic production conditions. Of great importance in solving this problem is the resolution of the CPSU Central Committee and USSR Council of Ministers, "On Improving Planning and the Economic Stimulation of Production and Procurement of Agricultural Products." The resolution inspires and provides an incentive for creative initiative among all workers of collectives and agricultural enterprises in the struggle to increase the effectiveness of agricultural production.

Thus, new, responsible and large-scale goals have been placed before agriculture. There is no doubt that with a powerful material-technical base, a large amount of experience and trained cadres and in cooperation with other branches of the national economy, these new goals will be achieved.

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AGRO-ECONOMICS AND ORGANIZATION

BELORUSSIAN OFFICIAL OUTLINES AGRICULTURAL PRIORITIES

Minsk SEL'SKOYE KHOZYAYSTVO BELORUSSII in Russian No 2, Feb 81 pp 4-7

[Interview with Belorussian Gosplan Deputy Chairman, V. G. Krestovskiy, by "SEL'SKOYE KHOZYAYSTVO BELORUSSII" editors; date of interview not given]

[Text] [Question] Viktor Grigor'yevich, what basic directions will the republic's agricultural development be taking during the new five-year-plan period?

[Answer] A characteristic feature of the 11th Five-Year Plan will be an acceleration in the growth of the production and procurement of all types of agricultural products. As compared with average levels achieved over the period 1976-1980, plans call for the republic's average annual grain production to rise 28.6 per cent, production of vegetables 12.4 per cent, sugar beets 10.5 per cent, flax fiber 28.4 per cent, meat production on all types of farms 11.2 per cent, milk 5.3 per cent and of eggs 7.7 per cent.

Purchases of agricultural products are to increase substantially. Higher production and procurement levels will be made possible through intensified farming and animal husbandry, extensive introduction of the latest practical innovations and advances in science and technology as well as by taking steps to prevent losses.

A great deal of attention will be given to qualitative improvement and efficient use of agricultural land, above all to increasing feed production. Plans call for substantial expansion of the area sown to perennial grasses, especially alfalfa, clover and other crops offering maximum protein yields. Legumes and grain mixtures will play an important role among the group of annual grasses.

Further specialization and concentration of agricultural production, introduction of intensive varieties and increasing the areas over which agricultural crops are cultivated with the employment of advanced industrial technologies producing large increases in yields will all contribute to realization of the planned program of increasing production and procurements from both crop-farming and animal husbandry operations. The latest methods of applying fertilizers will be extensively employed; we will also be applying trace-element fertilizers, improving soil-cultivation methods, introducing efficient methods of combined crop rotation etc.

Substantially greater resources than during the 10th Five-Year Plan will be channeled into efforts to increase soil fertility, the development of a stable feed base for our animal husbandry, the construction of warehouses and other storage facilities as well as capacities for primary processing of agricultural products and the modernization and expansion of livestock barns and other facilities.

[Question] What characteristically distinguishes the new five-year plan from the old one?

[Answer] The new five-year plan calls for further dynamic development and increased efficiency in all branches of agriculture, higher and better-quality production and continuation of the course already charted toward maximum intensification throughout the branch as a whole.

At the same time, the approach to the system of inter-relationships and coordination between branches of the agro-industrial complex is being altered somewhat. Successful realization of the food program requires unified planning, proportional and balanced development of the APK [agro-industrial complex] as a whole, substantial strengthening of its material-technical base, improvement of economic relationships between branches and the organization of effective branch cooperation in increasing agricultural production and improving the storage, transportation, processing and delivery of agricultural products to consumers.

The development of specific, integrated programs will be especially important, that is, categoric documents containing directives concerning specific departmental responsibilities, documents constituting a complete program of social-economic, production, scientific-research, economic administrative-organizational and other tasks and measures, all coordinated with respect to resources, responsibilities and schedules, directed toward achieving the most effective solution of our most important national economic problems, a solution which requires participation on the part of a number of branches. These documents should become an integral component of the five-year plan.

There is yet another aspect to the development of the five-year plan. It is exceptionally important that at all levels of planning, beginning with the kolkhoz and sovkhoz, a program of measures be outlined to insure maximum effective use of all material and technical resources allocated and that a persistent search be carried on for new internal capacities and potential for increasing production from both crop farming and animal husbandry operations.

[Question] What do you mean by the terms "agro-industrial complex" and "food program?" How could you explain them using our republic as an example?

[Answer] The agro-industrial complex is in fact a complex economic production system comprising the aggregate of a number of branches of the national economy specializing in the production of agricultural products, their processing and in the manufacture of the capital goods required to meets the needs of agriculture and the branches associated with it. It comprises three basic spheres: the branches of industry supporting agriculture, the food, meat and dairy industries and the procurement system; agricultural production itself and the branches and facilities responsible for procurement, transportation and storage of agricultural products.

Recent years have seen substantial changes in the level of development of kolkhoz and sovkhoz productive forces. Agriculture has received considerably increased supplies of materials and equipment; capital- and power-worker ratios have improved; cadre skill levels are higher while branches serving agriculture are showing an improved potential. All this has objectively required improved planning and incentives to greater agricultural production at all levels. This was the task set by the July (1978) plenum of the CPSU Central Committee. It consisted essentially in the fact that planning at all levels should be changed over to the preparation of specific, that is, integrated programs for increasing production of individual types of agricultural products--grain, feeds, animal products etc. "Each such program," L. I. Brezhnev pointed out at the October (1980) plenum of the CPSU Central Committee, "should be a solid plan of measures based upon precise calculations and oriented toward achievement of an end result, toward complete solution of one problem or another."

But new factors introduced into planning and economic functions are not solving the problems which have built up in the area of agricultural administration. It has therefore been considered necessary to develop a comprehensive food program, which, in accordance with the proposal put forward by L. I. Brezhnev would combine the problems involved in the development of agriculture as well as of the supporting branches of industry, procurement, storage, transportation, product processing and of food marketing.

[Question] What kind of development will we see of the system of agro-industrial integration as well as of interfarm cooperation? Will there be new development of the current pattern of regional specialization among individual regions of the republic?

[Answer] Agro-industrial integration in the Belorussian SSR will proceed via the creation of branch and branch-territorial associations for the production of individual types of products, industrial or agricultural enterprises playing the primary roles in this connection. Seven of these associations have already been formed as an experiment.

The Ministry of Fruit and Vegetable Farming of the BSSR has been created with a view to improving organization of the production, procurement, processing, storage and marketing of fruit and vegetable products and potatoes and to centralizing responsibility for all these functions within a single organization.

Plans call for interfarm cooperation to be based upon the creation of large enterprises specializing in the production of animal and feed products. Livestock complexes will be organized, along with specialized pedigreed livestock breeding farms.

Called upon to play an important role in accomplishing the task of sharply increasing meat production will be the implementation of the measures called for in the decree of the BSSR Council of Ministers concerning the organization throughout the republic of 124 interfarm beef-production associations along lines indicated by the experience of the Gomel' interkolkhoz association based upon Kolkhoz imeni Uritskiy.

We will also see further growth of zonal specialization of individual regions of the republic. Efforts are to be accelerated in connection with the formation of a beef-cattle husbandry zone in the Belorussian Poles'ye and completion of work on a pattern of individual regional specialization in the cultivation of the industrial crops of flax and beets. On these specialized farms flax is to take up to 20 per cent of the sown area, beets 20-25 per cent.

[Question] How are producer-consumer relations to be improved?

[Answer] Plans call for a great deal of effort within the republic to be devoted to improving the organization of procurement and the overall relationship between producer and consumer. Plans call for the establishment by 1985 of potato-, vegetable- and fruit-receiving and turnover points on 70 specialized vegetable farms. By the end of the five-year-plan period these points will receive and determine the quality of 280,000 tons of production directly on the farms themselves; 160,000 tons of potatoes, fruit and vegetables will be supplied to the trade system directly from the fields.

Containerized delivery of produce from field to storage facilities and the trade system will also be extensively employed. During the final year of the Plan, for example, 330,000 tons of potatoes, fruit and vegetables will be delivered by this method.

We will be seeing increases in volumes of flax transported from kolkhozes and sovkhozes in flax-processing-facility vehicles; it will be graded directly in the field and then received on the kolkhozes and sovkhozes themselves. Plans call for 76,500 of flax to be procured in accordance with this procedure in 1985.

Agro-industrial production associations are to be formed on a widespread basis. Along with the formation of a republic-level Ministry of Fruit and Vegetable Growing, oblast-level cost-accounting agro-industrial production associations for fruit and vegetable production will be created within the oblasts. These associations will comprise specialized farms for growing potatoes, vegetables, fruits and other products; canning and vegetable-drying facilities and specialized stores. The production, procurement, storage, marketing and processing of early potatoes, fruits and vegetables will thus remain in the same hands.

Other forms of inter-relationship between the producers and consumers of agricultural products will also be improved upon and introduced into practical operations.

[Question] Will we see improvement in the current system procurement? What distinguishing features can we point to here?

[Answer] Beginning in 1981 the state will be formulating unified procurement plans. A 50-per cent bonus in addition to purchase price will be paid for produce (except vegetables) sold to the state over and above Tenth-Five-Year-Plan levels.

Almost all livestock and milk kolkhozes and sovkhozes sell the state during the current five-year-plan period will be received locally and transported in procurement-organization vehicles.

[Question] What development will we see of the democratic principle as applied to the planning process?

[Answer] It has been generally known that directive organs have discussed the practice of imposing tasks upon kolkhozes and sovkhozes which are not provided for in state plans for the economic and social development of the USSR. It has been decided that volumes agricultural production, the size and structure of cultivated areas, the size of the livestock population, crop yields, animal productivity and other indicators of agricultural development are to be specified in five-year and annual plans formulated on the farms themselves with broad participation by specialists, kolkhozniks, workers and social organizations. There is only one requirement: these plans must be prepared taking into consideration both local conditions and the need to insure absolute fulfillment of established plans for state purchases of agricultural products and satisfaction of intrafarm requirements. Within the limits established for total bonuses and wages, production-team collectives (councils) have the authority to determine bonuses and wages for each team member along with allowances and extra payments for professional skills and the performance of two jobs.

[Question] As is commonly known, losses of agricultural products at all stages--in the field-transportation-procurement-storage--remain a sore point. There are especially great losses of vegetables, fruit and potatoes. How is this problem going to be solved?

[Answer] Losses of agricultural products at all stages of their production, transportation, storage and processing remain fairly substantial and are reducing the efficiency of the branch as a whole. The republic has undertaken a major effort to cut losses of agricultural products. It has so far been carried on in two directions: organization and equipment. It calls for closer monitoring by specialists, farm managers and people's control points; improvement of certain assemblies on harvesting and transport equipment; providing incentives to personnel for good product quality, savings in feed and other steps.

Of considerable importance in reducing losses is the large-group flow method of employing equipment in the harvesting and threshing of grain, the harvesting of potatoes, the preparation of feeds and other operations reducing the time required for the accomplishment of field work. Substantial capacities for storing agricultural products come on line in the republic each year. The Tenth Five-Year Plan period, for example, saw kolkhozes and sovkhozes alone construct facilities for the storage of 974,600 tons of grain. Storage for another 656,000 tons of grain and for 165,000 tons of potatoes and vegetables will be constructed during the Eleventh Five-Year Plan.

Many of the republic's kolkhozes and sovkhozes assign feed production to a separate branch. This also helps improve feed quality and reduce losses of the nutrients in it.

The centralized transport and delivery of cattle and milk set up within the republic is also helping cut losses and preserve the quality of animal products. While 489,000 tons of horned cattle and 564,000 tons of milk were transported by this system in 1975, the figures for 1980 were 575,000 tons and 1,222,000 tons respectively; the quantities of animal products delivered to the state under the system of centralized transport and delivery of animal products will be still greater in 1985.

[Question] What improvement will we see in the relationships between farms and Belgoskomsel'khoztekhnika [expansion unavailable] enterprises?

[Answer] Relationships between farms and Belgoskomsel'khoztekhnika enterprises must be structured such that their interests are directed toward a single goal--achievement of high and stable agricultural indicators. Efforts will be made during the 11th Five-Year Plan to improve the formation of prices for repair work and other services rendered kolkhozes and sovkhozes by Belgoskomsel'khoztekhnika enterprises. It would be to advantage to set the level of prices for major repairs of agricultural machinery and equipment taking into account their degree of wear and technical condition, since charges for these services are currently identical regardless of the actual condition and wear of the machinery.

According to the new model decree governing payment of bonuses to rayon (inter-rayon) production associations approved by the USSR State Committee on Technical Production Assistance to Agriculture and the central committee of the agricultural workers' trade union, bonuses are to be paid Goskomsel'khoztekhnika BSSR personnel in accordance with reductions achieved in costs of services rendered and work performed for agricultural organizations, the quality of this work and the fulfillment of contract obligations for kolkhozes and sovkhozes with respect to the type of work and services performed. It would be to advantage to make the income of Goskomsel'khoztekhnika enterprises and organizations directly dependent upon the final results achieved by the forms they service.

Indicators for commodity (gross) production and product sold currently play a key role in the planning and evaluation of indicators for the development of the republic's Goskomsel'khoztekhnika. Repair enterprises are therefore interested in using more new and expensive parts, since they are then included in "gross production" at full cost, while annual increases in the plan for "gross output" force enterprises to conceal capacities for greater production.

A new planning procedure has been introduced for a number of branches of Goskomsel'khoztekhnika beginning with the Eleventh Five-Year Plan. A standard net production in normative calculation reflecting internal enterprise expenditures, taking degree of re-equipment into account, will be taken as a primary indicator.

[Question] What kind of growth will we see in kolkhoz and sovkhoz equipment?

[Answer] Over the period 1981-1985, 79,000 tractors, 53,000 trucks, some 20,000 grain-harvesting combines and substantial quantities of other equipment will be supplied to the republic's agriculture. The kolkhoz and sovkhoz tractor fleet will accordingly grow to some 120,000 units; the number of trucks will rise to 60,000, that of grain-harvesting combines to 30,000, or to 20, 11 and 15 per cent above 1980 levels respectively.

The quantitative increase in the size of the machine-tractor fleet will be accompanied by an improvement in its structure. The K-701, T-150, T-150K and MTZ-80 high-power tractors and new trucks modified for agricultural use from the Ural and Kama Motor-Vehicle Plants will all be delivered in large quantities.

[Question] What specific measures are planned to increase the role science plays in agricultural development?

[Answer] Agricultural science will be concentrating its attention during the new five-year plan period primarily on the improvement of selection and seed growing. Republic scientists have been set the task of developing new grain varieties resistant to germination in the ear as well as to diseases and pests, highly responsive to fertilizers and with potential yields of 70-100 quintals per hectare and grain protein contents of 11-15 per cent.

As in the past, the republic's animal husbandry will continue its development in the current five-year plan period as well in the areas of meat and milk production. The task has been assigned of bringing the production of the dairy herd on public-sector farms by 1985 to 3055 kg, to 3325 kg by 1990 and to 4000 kg by 2000. And to achieve average daily weight gains during fattening of horned cattle of 900-1000 g, 650-700 g for swine, with minimum feed expenditures.

Scientists are concentrating their efforts upon the development of new intrabreed types of swine (the large white and Belorussian black striped breeds), the breeding of specialized lines on a pure-bred and multibreed basis and extensive exploitation in production of the effect of heterosis with interbreed crossing and linear breed hybridization. Plans call for the development of a specialized type of horned beef cattle satisfying present-day requirements.

In strengthening the feed base, scientists will be devoting their attention especially to comprehensive solution of the protein problem, to feed protein content and to changing feed production over onto an industrial basis.

Mechanization remains a key component of scientific and technical progress in agriculture. Plans call for the introduction of automatic systems for production-process control in poultry plants and livestock complexes fattening swine and horned cattle and the introduction of ASU [automatic control systems] in all oblasts, 18 rayons and 43 associations and enterprises.

Scientific and technical progress objectively governs any rise in the level of the socialization of production and the development and spread of higher forms of social production organization. Interfarm cooperation in animal husbandry will be more extensively adopted in connection with cattle and swine raising and in the production of wool and mutton. The plant-growing field will see this system introduced at accelerated rates in the processing of seed material, hothouse vegetable production and in industrial feed processing.

[Question] What specific measures are planned to strengthen cost accounting, improve the financial and economic condition of agricultural operations and increase the profitability of agriculture?

[Answer] Cost accounting will be strengthened under present-day conditions on the basis of greater responsibility to be imposed upon all managers and executives for mismanagement, lack of control, waste, poor utilization of material resources, energy, raw materials and productive capacities and for breaches of financial and production discipline. Of increasing importance in evaluation of the performance and payment of bonuses to collectives will be the indicators of reduction in production costs, growth of labor productivity, increases in profits, efficiency in the utilization of machinery and equipment and of the recovery of capital investments.

Such factors of utmost importance as the introduction of new, technically well-founded norms for improvement of the system of providing material incentives which take into account the specific contribution of each collective and worker to results achieved and improvement in the quality of economic analysis and accounting and reporting should be more vigorously introduced into practical use.

Necessary conditions for improving cost accounting and increasing production profitability on this basis would include efforts to achieve high standards in crop cultivation, efficient utilization of reclaimed and irrigated land, higher livestock productivity, efficiency in feed expenditures, full mechanization of operations and reduction of labor expenditures per unit of production. Much remains to be accomplished in the way of improving production quality, crop structure, seed growing and selection work and of labor organization and production management.

Also called upon to play an important role in strengthening the financial and economic condition of kolkhozes and sovkhozes (above all of those lagging behind or which are turning in only mediocre performances) will be implementation of the measures called for in the decree adopted in November 1980 by the CPSU Central Committee and the USSR Council of Ministers, "Improving Planning and Economic Incentives to Production and Procurement of Agricultural Products."

[Question] What measures will be implemented to improve the welfare of agricultural workers?

[Answer] Implementation of the measures provided in the 11th Five-Year Plan to improve the economy and increase the efficiency of agricultural production will insure the conditions necessary for further improvement of the welfare of agricultural workers. The wages of kolkhozniks and sovkhoz workers and employees will rise by approximately 17 per cent over the five-year period, public consumption funds for the benefit of the rural population by 20 per cent.

Plans call for capital investment in the amount of 903 million rubles of state and kolkhoz funds to be channeled into the construction of housing for agricultural workers, an amount 1.3 times greater than expended during the 10th Five-Year Plan period, 2.1 times greater than the figure for the Ninth. The period will see 4,743,000 m² of new living space made available as compared with 3,867,000 m² during the Ninth Five-Year Plan. Capital investment in education is going up 1.4-fold, 1.6-fold for public health purposes.

Further increases in the level of mechanization of agricultural operations and a changeover to industrial methods of production in crop cultivation and animal husbandry will lighten the work and improve working conditions. There will be increases in minimum old-age and disability pensions and benefits to be paid in case of loss of family provider. Kolkhozniks will now be granted the same minimum annual paid vacation as workers and employees. The range of personal and domestic services offered in the village will also be improved and expanded.

[Question] Viktor Grigor'yevich, if you were to try in conclusion briefly to sum up what you have said here, what would you consider the most important?

[Answer] I should above all emphasize the enormous scales involved in the great work we have to do in implementation of the decision of the 26th CPSU Congress. Realization of the food program outlined in Basic Directions of the Economic and Social Development of the USSR for the Period 1981-1985 and for the Years to 1990 will require the most serious, thoroughgoing efforts on the part of our scientists, specialists and all agricultural workers. We are going to have to rethink the role of the kolkhoz, the sovkhoz and of all the partners involved and take a fundamentally new look at the way their inter-relationships are presently organized.

It is important that the deep meaning of the decisions of the 26th CPSU Congress be brought home to each individual among our agricultural population. Extensive efforts should be undertaken to explain that effective operation of the entire agro-industrial complex will result in greater efficiency in social production overall and will constitute an indispensable condition for further improvement of the material welfare of the Soviet people.

A thorough and general analysis should be undertaken of the economic and financial condition of each kolkhoz and sovkhoz and effective measures taken to improve their economic health, increase the productivity of their labor and the profitability of their operations, eliminate unproductive expenditures and unnecessary expenditures of resources and to insure fuller utilization of internal farm capacities. Thoroughly thought through planning, cost accounting, rigorous record-keeping procedures, thorough analysis, continuous monitoring of target fulfillment and a rigorously thought-out system of material incentives--all of these are effective controls for increasing production efficiency. They have now to be employed on every kolkhoz and sovkhoz.

The primary objective of the food program is to insure high quality production in the required amounts. We will reach this objective if everyone, every manager, kolkhoznik, worker, land reclamation specialist and procurement agent, works with maximum output of effort and knowledge and an awareness of the greatness of the tasks our party has set of further improving our agriculture and the welfare of our people.

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AGRICULTURAL MACHINERY AND EQUIPMENT

DEVELOPMENTAL PROSPECTS FOR MACHINE BUILDING IN LIVESTOCK SECTOR

Official Outlines Progress, Tasks

Moscow SEL'SKAYA ZHIZN' in Russian 2 Apr 81 p 2

[Article by V.N. Tkachev, Deputy Minister of USSR Ministry of Machine Building for Animal Husbandry and Fodder Production: "Horizons of Technical Progress"]

> [Text] Sixty years ago, on 1 April 1921, the Council of People's Commissars adopted the decree entitled "Agricultural Machine Building," signed by V.I. Lenin. "To recognize agricultural machine building as being a matter of extreme state importance" reads the first paragraph of this historic document. In it, an appeal is made for the "development on an urgent basis of a general plan for organizing agricultural machine building according to the principle of mass production and production specialization."
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> Lenin's decree played a tremendous role in converting the country's agriculture over to the socialist path of development and transforming it into one of the most mechanized systems of agriculture in the world. The Leninist ideas and positions have been thoroughly expressed and developed in the agrarian policies of our party and in the report delivered by L.I. Brezhnev during the 26th CPSU Congress, entitled "Principal Trends in the Economic and Social Development of the USSR During the 1981-1985 Period and For the Period Up To 1980."
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> In response to a request by our correspondent, the Deputy Minister of the USSR Ministry of Machine Building for Animal Husbandry and Fodder Production V.N. Tkachev discusses in this article the manner in which the production of machines for animal husbandry and fodder production is being developed.

The collection of machines being produced by industry for animal husbandry and fodder production is increasing with each passing year. Improvements are also being realized in the quality of these machines. New items of modern technical equipment are being created which will make it possible to raise considerably the level of complex mechanization on farms and complexes in all branches of animal husbandry. The collectives of machine builders achieved especially noticeable results in this work during the Tenth Five-Year Plan. It is sufficient to state that during a period of just 5 years, the country's agriculture was supplied with as much equipment for animal husbandry as was supplied during the three previous five-year plans taken together. During a brief period and from a monetary standpoint, the volume of machine and equipment deliveries for animal husbandry and fodder production throughout the country increased to 2 million rubles annually.

On the whole, the tasks of the Tenth Five-Year Plan were fulfilled ahead of schedule by the entire branch. The workers attached to our enterprises, the engineering-technical workers and office workers accepted the congratulations of Leonid Il'ich Brezhnev, expressed to us in November of last year, with a sense of having carried out their obligations. In particular, it was stated in this congratulation that "as a result of the selfless labor performed by the branch's manual workers, engineering-technical personnel and office workers, the purposeful organizational and political activities and the extensively disseminated socialist competition for raising operational efficiency and quality, substantial improvements were realized in creating and mastering the production of a new generation of equipment for converting animal husbandry over to a modern industrial basis."

What changes have taken place in the technical equipping of animal husbandry? Since the moment that our ministry was organized, 257 new and modernized machines have been created. The problem of mechanizing dairy farms and industrial complexes for the maintenance of from 200 to 1,200 cows has been solved. The standardization of milking units has been raised to 85 percent and manure-collection conveyer lines and automatic watering bowls -- to 70 percent.

Complete equipment for the preparation of feed on large-horned cattle farms and on sheep farms and also equipment for the processing of food remnants have been created and mastered. The agricultural requirement for a complete set of equipment for preparing feed on swine farms is being satisfied completely. A new feed distributor-mixer, developed by our collectives and intended for the preparation of multi-component rations, can be referred to as a type of feed preparation shop on wheels. For the very first time, the rural areas are being supplied with coarse feed mincers, the productivity of which exceeds by more than a factor of ten that of the well known pivotal mincers.

During the years of the Tenth Five-Year Plan, the production of a family of standardized scuffling and scraping units and other equipment for the mechanized collection and transporting of manure was mastered. The basic machine of this family is the new TSN-160 conveyer, in which use is made of a non-dismountable anchor chain. Its service life is three times longer. Scraper units intended for use on box farms and complexes have been created based upon this conveyer.

The enterprises of the branch devoted special attention to the production of machines and equipment for animal husbandry complexes engaged in the production of beef and pork on an industrial basis. Towards this end, the ministry's plants are producing sets of machines which will ensure the complex mechanization and automation of all processes at pork production complexes for 24,000, 54,000 and 108,000 swine and at [illegible] production complexes for 10,000 and 24,000 animals. The use of this equipment made it possible to reduce labor expenditures for the production of a quintal of beef at leading farms to 2.4-2.5 man-hours and for the production of a quintal of pork -- to 2-2.5 man-hours.

An important task was the creation of a new generation of machines for the complex mechanization and automation of poultry raising operations. It has been solved for the most part. Our plants are presently producing a new set of equipment for maintaining an industrial flock of laying hens, based upon the use of triple-level batteries of cages of the cascade type, which will make it possible to reduce labor expenditures for the production of a unit of output by 30 percent. Batteries of cages have been created and are being produced for the raising of young poultry stock and broilers.

Great importance has been attached to converting over from the creation and production of individual types of machines to the production of a highly productive set of equipment for a single technological network. During this period of time, we succeeded in organizing the production of 108 technological sets of machines and equipment, as required for a machine system. This enabled the rural workers, during the five-year plan, to raise the level of complex mechanization of operations on large-horned cattle farms by a factor of 1.6 and on swine raising and poultry raising farms -- by a factor of 1.4.

A very special place is occupied by the feed harvesting equipment. Within a very brief interval of time, the machine builders completely mastered a new generation of such highly productive items of equipment as a self-propelled feed harvesting combine, a self-propelled mower-crusher and also a standardized self-propelled pull-type feed harvesting combine. The feed harvesting combines have a high degree of multiple-purpose capability -- they are equipped with three quickly detachable devices, which makes it possible to use them for procuring different feeds over a period of 60-70 days annually.

In 1978, a set of machines was made available for production operations which makes it possible to employ a new and progressive technology for procuring hay in large rolls weighing up to 500 kilograms. It consists of a roll pick-up baler, devices for loading the rolls and a crusher-mincer and it makes it possible to lower labor expenditures for the harvesting of pressed hay by 20-25 percent. A set of machines consisting of a haystack former and a haystack wagon was created for the procurement of loose hay. Its introduction is making it possible eliminate manual labor completely in the harvesting of loose hay and it is also reducing the losses in hay.

All of the collectives engaged in supplying the rural areas with new equipment are confronted by great tasks. The principal trends for the economic and social development of the USSR during the 1981-1985 period and for the period up to 1990 call for the production of sets of highly effective machines and equipment for ensuring the introduction of progressive technological processes for the procurement, preparation and issuing of feed and for the maintenance and raising of livestock and poultry and also equipment for fresh water fishing.

The plans call for a considerable expansion in the production of self-propelled feed harvesting machines. In addition, a requirement exists for the development of production capabilities, for increasing the production of machines having improved productivities, lifting capacities and road handling capabilities for applying organic fertilizers to the soil, for transport vehicles possessing increased capacities for transporting green fodder, for highly productive loading equipment and also for equipment used for the primary processing, cooling and storing of milk on the farms.

There can be no doubt but that these tasks will be carried out successfully. Thus the decree signed by Vladimir Il'ich Lenin at the dawn of Soviet rule is being implemented.

Joint Technological Effort Initiated

Moscow SEL'SKAYA ZHIZN' in Russian 25 Apr 81 p 2

[Article by S. Luzgan: "Valuable Initiative"]

[Text] The party organizations and collectives of a number of industrial enterprises of scientific and design organizations of Minzhivmash, the USSR Academy of Sciences and VASKhNIL [All-Union Academy of Agricultural Sciences imeni V.I. Lenin] have resolved to carry out joint work during the 11th Five-Year Plan in connection with the creation of designs and mastering the production of highly productive, reliable and durable equipment for animal husbandry

Based upon collaboration agreements, the initiators vowed to carry out a complex of work associated with the creation and production of sets of equipment for the feed preparation shops of large-horned cattle farms and modern swine complexes, units for the moisture-barothermal treatment of forage grain, standardized non-screen mincers and other items of equipment. For example, the production of sets of technological equipment for feed preparation shops will make it possible to increase the use of the non-grain portion of a crop for cattle feed by 10-20 percent and to raise the effectiveness of its use.

The Central Committee of the Communist Party of the Ukraine has approved the initiative displayed by those collectives of enterprises of agricultural machine building and scientific and design organizations throughout the republic, who undertook joint obligations aimed at accelerating the production and raising the technical level of machines and equipment for animal husbandry.

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TILLING AND CROPPING TECHNOLOGY

MEASURES FOR INCREASING GRAIN PRODUCTION IN NORTHEAST NONCHERNOZEM ZONE

Moscow SEL'SKAYA ZHIZN' in Russian 24 Apr 81 p 2

[Article by Ye. Rodin, honored agronomist of the RSFSR and director of the Scientific Research Institute of Agriculture for the Northeast: "Taking Specific Conditions Into Account"]

> [Text] Concerning certain peculiarities in the agricultural practices employed for grain crops in the northeast portion of the nonchernozem zone.

The diverse nature of the soil-climatic conditions in the vast region which includes Gor'kovskaya and Kirovskaya Oblasts and the Mariyskaya, Mordovskaya and Chuvashskaya ASSR's requires differentiated and scientifically sound systems for the carrying out of farming operations. Moreover, the period for carrying out spring field work here is very brief. After the snow has disappeared, intensive evaporation takes place on the structureless soils and if this process is not brought to a halt by loosening the soil, up to 50-60 percent of the productive moisture in the arable layer is lost within a period of 3-5 days.

Thus, under the conditions found in the northeastern part of the nonchernozem zone, the campaign to retain moisture and the timely preparation of the soil for sowing and especially for the early sowing periods for grain crops are considered to be, in the majority of instances, decisive factors with regard to increasing the crop yields.

This is why the zone's farmers are persistently introducing agrotechnical methods which will make it possible to accelerate the tempo of the spring field operations and thus shorten the growing season and harvest the crops prior to the onset of the period of inclement autumn weather.

The principal soil cultivation method has been and continues to be that of autumn plowing, carried out immediately following the thrashing of the grain crops and in the southern regions of the zone -- with preliminary shallow plowing of the stubble fields. But during the autumn of last year, owing to the complicated conditions which prevailed, the plowing was not carried out on all areas. The most complicated situations developed in Gor'kovskaya and Kirovskaya Oblasts and in the Mordovskaya ASSR.

For which agrotechnical operations should a preference be shown this spring?

In the case of fields plowed during the autumn, special importance is attached to early spring harrowing. The work should be carried out using wide-swath units having heavy spike-toothed or needle-shaped harrows. The subsequent technology to be employed will be dependent upon the predecessor crop, the mechanical composition of the soil, the sowing periods and a number of other factors.

On fields which were not plowed during the autumn, it is recommended that differentiated cultivation be carried out taking into account the preceding crop, the condition of the soil and the type of weeds encountered. Extensive use must be made of minimalization methods -- a creative reduction in the tilling depth based upon local conditions, a curtailment and combining of technological operations and a combining of mechanical and chemical measures for combating weeds.

On tamed soils, following row crops, peas, flax and also stubble predecessor crops and when applying optimum dosages of mineral fertilizers in behalf of barley, spring wheat and oats, spring plowing should ideally be replaced during the early periods by soil loosening to a depth of 10-12 centimeters, with simultaneous harrowing and subsequent disking and packing.

On those fields where the soil is for the most part of a heavy mechanical composition, packed down heavily and severely rutted by the wheels of tractors and combines or badly contaminated by perennial weeds, a requirement will exist for spring plowing with mandatory harrowing and pre-sowing and, in a number of instances, post-sowing packing. For spring plowing, it is best to use the PKA-2 multiple-unit assembly, which is capable of carrying out several agrotechnical operations during just one pass.

This year we can expect a considerably greater (than usual) propagation of weeds in the spring crop plantings -- the entire mass of weed seed which fell last autumn remained on the surface of the soil. Thus, regardless of which method is employed, preparations should be made in advance for carrying out such crop tending measures as harrowing and chemical weed control work.

On fields that are covered with weeds, especially one on which a late-sown crop has been planted, two-stage cultivation should ideally be carried out, at different depths and with an interval of 10-12 days, in order to provoke and destroy the weed seedlings.

All of the work to be carried out on the vast spring crop fields in the region requires that the machine operators display not only knowledge but also professional expertise and, finally, a conscientious and creative attitude towards their work. More extensive use must be made of such production-mastered multiple-unit assemblies as the RVK-3, RVKS-3.6, PKA-2 and VIP-5.6 and the sowing machines SZP-3.6 in its press variant and the SZS-2.1. This will make it possible to improve the quality of soil cultivation and accelerate the sowing periods.

Special concern must be shown for the winter crop plantings, the wintering conditions of which were unfavorable. The freezing of the soil on fields occupied by them was negligible or generally not observed, a ground or hanging icy crust formed in almost all areas and in the northern and eastern portions of the zone the snow cover reached more than a meter in some areas. All of these factors caused strong exhaustion among the plants and a delay in the thawing of the snow can adversely affect such crops.

Under such complicated conditions, an early spring mulching of the winter crops with peat or phosphorite meal can produce a positive effect. The team headed by Hero of Socialist Labor P.N. Kozhemyakin of the Kirovets Sovkhoz in Nemskiy Rayon of Kirovskaya Oblast usually applies 2-3 quintals of potassium salt per hectare. In order to prevent wheel tracks from forming, the work is carried out during the period of morning frosts. In order to destroy the icy crust, use should be made of wide-swath ring-lug roller units or BIG-3 needle-shaped harrows, with no angle of attack established.

On water-logged fields having stagnant water, harrowing is carried out together with an arrangement for draining off the water.

At the beginning of the growing season for the winter crops, the plantings should be inspected and a decision made as to which tracts require additional sowing with spring crops and which tracts require complete resowing. If the density of a stand is 150-100 plants per square meter, additional sowing is carried out using early ripening varieties of barley, with a simultaneous application of fertilizer; the resowing of winter crops is carried out on fields where the plant mortality was extensive.

Spring top dressings must be applied in a very thorough manner. They are especially important for those crops which either were not fertilized whatsoever in the autumn or were given only small dosages of complex fertilizers. Use is made of the early spring method for distributing mineral fertilizers and as the soil ripens -- the root method. Quite often, the second method for applying fertilizers is the only one possible, since towards the end of the snow thawing period, when it is possible to commence a surface application of fertilizer, positive temperatures arrive and units loaded with fertilizers are either unable to navigate the fields or they leave deep wheel tracks.

Special attention should be given to the fertilization of winter crops sown following occupied fallow. According to data supplied by the Scientific Research Institute of Agriculture for the Northeast, such plantings of winter rye experience a raised requirement for nitrogen and thus the dosage of nitrogen fertilizer should be increased to 60 kilograms of active agent per hectare. On seed production farms, the winter crops should ideally be given a top dressing containing both nitrogen and phosphorus. As the soil ripens, the harrowing should be carried out rapidly. This will improve the water and air regime, remove dead foliage from the plants and [illegible] the harmful effects of snow mold and sclerotinia.

Large areas of winter rye in the zone have been sown using long-stalk varieties. In order to prevent them from lodging, special importance will be attached to treating the plantings with the TUR preparation or Campozan.

An important factor today with regard to the intensification of farming is that of improving the structure of the area under crops. In the Summary Report of the CC

CPSU to the 26th party congress, special attention was devoted to this subject. It bears mentioning that considerable changes have taken place in recent years in the structure of the grain crops in the nonchernozem zone. A sharp increase has taken place in the proportion of grain forage crops. For example, barley already occupies 42 percent and oats 20 percent of all grain, pulse and groat crop plantings.

Such changes are fully justified. Analysis reveals: on leading farms in Kirovskaya Oblast, which are obtaining a maximum cropping power, the area used for clean fallow amounts to only 3-11 percent, while the proportion of spring crops in the grain field structure is 65-68 percent. Barley constitutes the principal proportion on the spring crop fields. Certain kolkhozes and sovkhozes (100 of more than 500 in the oblast) are also profiting by virtue of the fact that, under other conditions, they are setting aside no less than 34 percent of their grain fields for winter crops. Of the spring grain crops, a preference is being shown here for barley. It occupies more than 40 percent of all of the grain fields.

In relying upon the experience of a considerable group of leading farms in improving the structure of the areas under crops, it is obviously also necessary to take into account the local peculiarities of the natural and soil conditions, farm specialization and economic development. The task has been assigned of restoring the pulse crop plantings to the level they occupied in 1975 -- 400,000 hectares.

Several varieties of barley and oats are regionalized in the zone at the present time. In this regard, it is deemed advisable for each farm to sow 2-3 such varieties, differing in terms of their economic-biological characteristics, their early ripening capability and their requirements with regard to growing conditions. This will facilitate the selection of predecessor crops, eliminate tension in the carrying out of the principal operations and guarantee the development of stable yields.

Obviously, in the future the principal portion of the barley area (60 percent) must be occupied by midseason ripening varieties, in which group the Moskovskiy-121 variety will be replaced by one more resistant to lodging; 40 percent of the plantings will be occupied by late ripening and early ripening varieties.

A similar trend must be maintained on the whole for oats plantings. However, considering the late-ripening nature of this crop, approximately one half of the areas should be occupied by such early-ripening varieties as Skorospelyy, Gorizont and Kirovskiy. During the past few years, the introduction of the new and intensive Sel'ma and Astor varieties has commenced in the zone.

One of the most important means for increasing the production of grain in Volgo-Vyatskiy Rayon is that of improving the structure of the areas under crops and also the varieties being employed.

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ADVICE ON PROPECTING CROPS FROM PESTS IN UKRAINE

Kiev SIL'S'KI VISTI in Ukrainian 25 Apr 81 p 2

/Article by I. Babchuk, deputy head "Ukrsil'hospkhimiya" Association, chief Plant Protection Administration, UkSSR Ministry of Agriculture; V. Hryhorenko, head Republican Laboratory of Agricultural Crop Pest and Disease Prognosis and Diagnostics; V. Omelyuga, head Prognosis Laboratory, Ukrainian Scientific Research Institute of Plant Protection, candidate of biological sciences: "We Shall Protect the Crops from Pests"/

/Text/ The weather conditions last winter promoted a marked infestation of winter crops and perennial grasses by mice-like rodents particularly in Vinnitskaya, Ternopol'skaya, Ivano-Frankovskaya, Cherkasskaya, Khmel'nitskaya, Nikolaevskaya and other oblasts. During this month they will multiply intensively, and if they are not destroyed may damage the crops considerably.

In the Odessa area southern grey weevils left the soil earlier than normally. The warming trend which followed will promote beetle feeding on shoots of beets, sunflowers, corn and other crops (especially in Odesskaya and in the south of Vinnitskaya Oblast).

Wireworms are busily moving into soil top layers and will damage grain. Therefore, prior to sowing corn, sunflowers and other crops the fields should be inspected additionally. If three-four wireworms show up per square meter, the sowing material must be treated with gamma-isomer Hexachloran, if a larger amount is present corn and sunflowers should not be sown.

Meadow moth caterpillars will be in the pupa stage in the second half of April. At the end of that month and in the beginning of May (when the air temperature will go up two-three degrees higher than average) the flight of moths will start in Voroshilovgradskaya, Donetskaya, Zaporozhskaya, Dnepropetrovskaya, Khersonskaya and other oblasts.

In the spring grain ground beetles cause the most damage to grain crops. Although 1.5 million hectares were treated against them in the fall, even now these pests are evident over a considerable crop area. Most ground beetle larvae in the Steppe Zone developed during the temperature rise in the first half of April. Quite a few pests remain in heavily damaged crops which will be overseeded or reseeded. These areas must be treated with Hexachloran preparation during soil tilling; they must not be reseeded with cereal crops which would be damaged by the larvae.

Moderately moist weather with an increased temperature expected over most of the republic's territory will promote the appearance of grain fleas which will damage spring spike crops. In addition winter and spring crops will be infested by grain flies (Swedish, Hessian, wheat and other). In some places crops will be infested by plant lice. Therefore, winter and spring crops must be inspected during the three-leaf phase to detect pests and determine measures for their destruction.

At the end of April and in the beginning of May chinch bugs will fly from their winter location to infest crops in the southern oblasts. A larger number of them is expected in the fields of Zaporozhskaya, Khersonskaya, Nikolaevskaya, Odesskaya and several other oblasts.

During this month an intensive infestation of thickened winter wheat crops with mildew is possible and in higher temperature with brown rust.

Pulse crops in the sprouting phase will be damaged by tuber weevils expected in fairly large numbers in the central rayons of the Steppe and Forest-Steppe Zones, especially in Kirovogradskaya Oblast.

Last winter which was comparatively warm provided good wintering for sugar beet pests. Therefore, in many beet sowing oblasts sprouts must be protected from beet weevils, lice, maggots, root rots and other pests and diseases.

In the first half of April chinch bugs moved from lower to upper soil layers in most oblasts. In some areas pests will emerge on the surface infesting fields. A mass flight of weevils is possible. Many of these pests are now over last year's beet fields in farms of Poltavskaya, Cherkasskaya, Kirovogradskaya, Dnepropetrovskaya, Kievskaya and some other oblasts. Many of them were also discovered in fields allocated for sugar beets this year. Special attention should be paid to beet fields from the year before last where there are considerable supplies of beetles coming out earlier and faster.

In many of the republic's central and western oblasts on fields where last year beets were grown quite a few beet maggots remain. They are now infesting the area and in the third decade of April will begin their flight. There are still many pests in their wintering areas. If they are not destroyed they can cause a lot of damage to sugar beet shoots, especially in kolkhozes and sovkhozes of Vinnitskaya, Lvovskaya, Ivano-Frankovskaya, Cherkasskaya, Ternopol'skaya, Zhitomirskaya, Rovenskaya, Chernovitskaya and also Kirovogradskaya, Nikolaevskaya and some other oblasts.

Beet lice will also infest plantations damaging sprouts.

During unstable, cool weather and in increased humidity root rots will appear on sugar beet shoots.

Apple moth caterpillars will appear in orchards during warm weather, especially in the second half of April, as well as caterpillars of white butterflies and silkworm from their winter nests, and orchard weevils from their wintering areas. They will damage buds. In favorable conditions apple and pear tree leaves will show effects of disease in some areas. To save the orchards from pests and diseases, they must be sprayed with poison chemicals during bud formation.

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